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BUREAU OF AMERICAN ETHNOLOGY

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BY

J. W. POWELL

DIRECTOR

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[TITLE PAGE]

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THE SERI INDIANS

BY

W J McGEE

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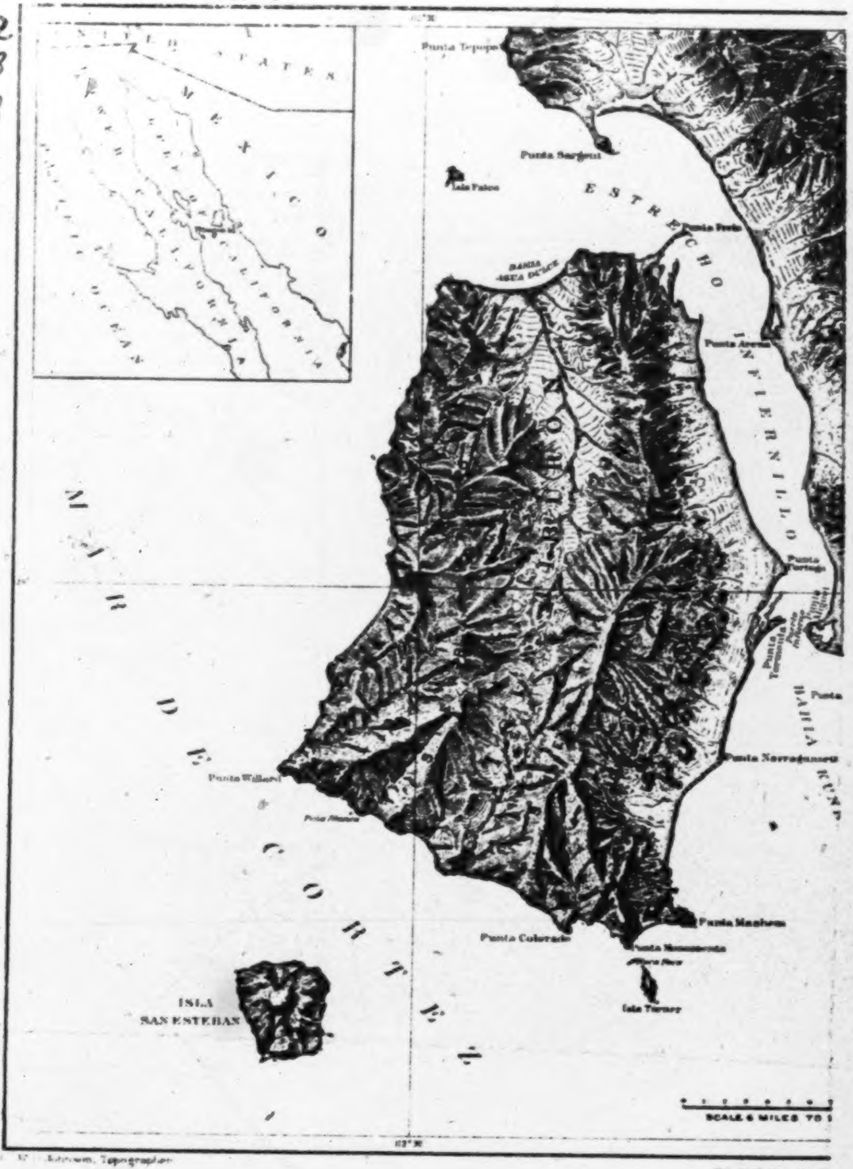
UNITED STATES
MEXICO
BAJA CALIFORNIA
GULF OF CALIFORNIA
PACIFIC OCEAN
Punta Tepopa
Punta Sargent
Isla Patos
ESTRECHO INFIERNILLO
Punta Perla
BAHIA AGUA DULCE
Punta Arenas
TIBURON
Punta Tortuga
BAHIA KUNK
Punta Narragansett
MAR DE CORTÉS
Punta Willard
Punta Colorada
Punta Mashem
Punta Monumento
Isla Turner
ISLA SAN ESTEBAN
SCALE 6 MILES TO 1
112° 30'

W. ... Johnson, Topographer

SERII

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[p. 8-A]

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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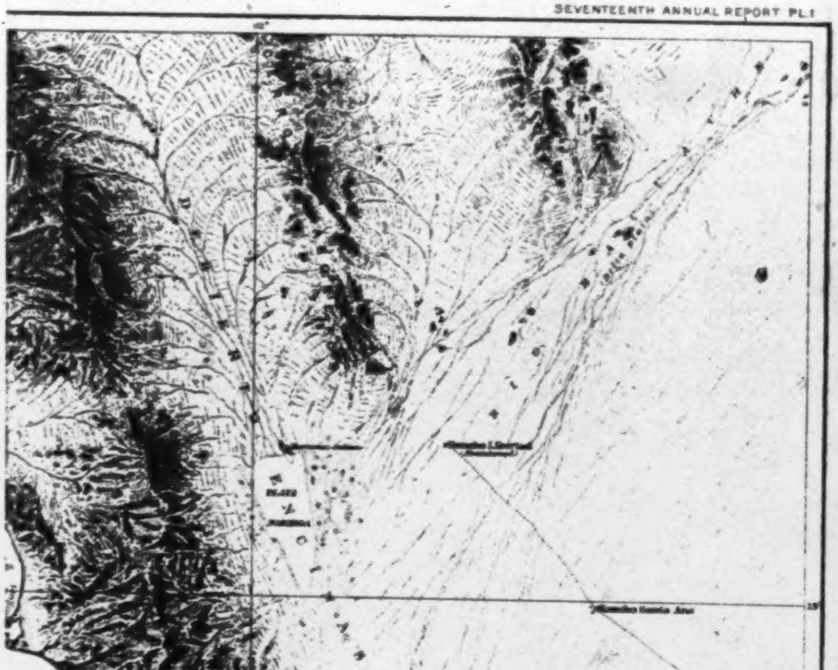
Rancho Santa Ana
Rancho San Francisco de Costa Rica
Punta Ygnacio
Isla Turner
BAHIA KINO
Punta Kino
RIO SONORA
(Delta plain)
1 INCH

LAND

W J McGee, Ethnologist in Charge

[p. 8-8]

THE SERI INDIANS

By W J McGee

INTRODUCTION

Salient Features

Something has been known of the Seri Indians (Seris, Ceris, Ceres, 114
Heris, Tiburones) since the time of Coronado, yet they remain one of the
least-studied tribes of North America. The first systematic investigation
of the tribe was made in the course of expeditions by the Bureau
of American Ethnology in 1894 and 1895; it was far from complete.

The Seri Indians are a distinctive tribe in habits, customs, and language, 101
inhabiting Tiburon island in Gulf of California and a limited
adjacent area on the mainland of Sonora (Mexico). They call [131]
themselves *Kun-kaak* or *Kmike:* their common appellation is from
the Opata, and may be translated "spry". Their habitat is arid and 133
rugged, consisting chiefly of desert sands and naked mountain rocks,
with permanent fresh water in only two or three places; it is barred from
settled Sonora by a nearly impassable desert. Two centuries ago the 161
population of the tribe was estimated at several thousands, but it
has been gradually reduced by almost constant warfare to barely three
hundred and fifty, of whom not more than seventy-five are adult males,
or warriors.

The Seri men and women are of splendid physique; they have fine 142
chests, with slender but sinewy limbs, though the hands and especially
the feet are large; their heads, while small in relation to stature,
approach the average in size; the hair is luxuriant and coarse, ranging
from typical black to tawny in color, and is worn long. They are notably [147]
vigorous in movement, erect in carriage, and remarkable for fleetness
and endurance.

The Seri subsist chiefly on turtles, fish, mollusks, water-fowl, and 105
other food of the sea; they also take land game, and consume cactus
fruits, mesquite beans, and a few other vegetal products of their
sterile domain. Most of their food is eaten raw. They neither plant
nor cultivate, and are without domestic animals, save dogs which
are largely of coyote blood.

The habitations of the Seri are flimsy bowers of cactus and shrubbery,
sometimes shingled rudely with turtle-shells and sponges; in some

cases these are in clusters pertaining to matronymic family groups; in other cases they are isolated, and are then often abandoned and reoccupied repeatedly, and are apparently common property of the tribe. The habitations afford some protection from sun and wind, but not from cold and wet, which are hardly known in winterless and nearly rainless Seriland.

The Seri clothing consists essentially of a kilt or skirt extending from waist to knees; sometimes a pelican-skin robe is worn as a blanket or mantle, and used also as bedding; the head and feet, as well as the bust and arms, are habitually bare, though a loose-sleeved wammus reaching not quite to the waist is sometimes worn. These garments were formerly woven of coarse threads or cords made from native vegetal fibers; the belt is generally of twisted human hair, of horse hair, of dressed deerskin, or of snake skin; the robe consists of four, six, or eight pelican skins sewed together with sinew. The pelican-skin robes are still used, though the aboriginal fabric is commonly replaced by cotton stuffs obtained through barter or plunder. Cords of human hair and skins of serpents are used for necklaces.

The sports and games of the Seri Indians include racing and dancing, and there are ceremonial dances at the girls' puberty feasts, accompanying the rude music of improvised drums. Decoration is ordinarily limited to symbolic face-painting, which is seen especially among the females, and to crude ornamentation of the scanty apparel. A peculiar pottery is manufactured, and the pieces are sometimes decorated with simple designs in plain colors.

The bow and arrow are habitually used, especially in warfare, and turtles and fish are taken by means of harpoons, shafted with cane and usually tipped with bone, charred wood, or flotsam metal. The arrows are sometimes provided with chipped stone points, though the art of chipping seems to be acultural and shamanistic. The ordinary stone implements are used for crushing bone and severing sinew or flesh, and also for mulling seeds and other food substances; they are mere cobbles, selected for fitness, and retained only if their fitness is increased by the wear of use, after the manner of protolithic culture. Graceful balsas are made from canes, bound together with mesquite-fiber cords; and on these the people freely navigate the narrow but stormy strait separating Tiburon and the neighboring islets from the mainland. They make a distinctive pottery, which is remarkably light and fragile. Its chief use is carrying water to habitations (always located miles from the spring or tinaja) or on desultory wanderings. Shells are used for cups, and to some extent for implements. They have a few baskets, which are not greatly different from those made by neighboring tribes.

The modern Seri are loosely organized in a number of maternal groups or clans, which are notable for the prominence given to mother-right in marriage and for some other customs; and there are indications that the clan organization was more definite before the tribe was so

105 greatly reduced. The leading clans are those of the Pelican, the chief tribal tutelary, and the Turtle, a minor tutelary. At present polygyny prevails, professedly and evidently because of the preponderance of females due to the decimation of warriors in battle; but both custom and tradition tell of former monogamy, with a suggestion of polyandry. The primary marriage is negotiated between the mothers of the would-be groom and the prospective bride; if the mother and daughter in the latter family look with favor on the proposal, the candidate is subjected to rigorous tests of material and moral character; and if these are successfully passed the marriage is considered complete, and the husband becomes a privileged and permanent guest in the wife's household. Family feeling, especially maternal affection, is strong; but petty dissensions are common save when internal peace is constrained by external strife. The strongest tribal characteristic is implacable animosity toward aliens, whether Indian or Caucasian; certainly for three and a half centuries, and probably for many more, the Seri have been almost constantly on the warpath against one alien group or another, and have successfully stayed Spanish, Mexican, and American invasion. In their estimation the brightest virtue is the shedding of alien blood, while the blackest crime in their calendar is alien conjugal union.

192 The Seri vocabulary is meager and essentially local; the kinship terms are strikingly scanty, and there are fairly full designations for food materials and other local things, while abstract terms are few. Two or three recorded vocables seem to resemble those of the Yuman languages, while the numerals and all other known terms are distinct. [193] The grammatic construction of Seri speech appears not to differ greatly from that of other tongues of Sonora and Arizona; it is highly complex and associative. The speech is fairly euphonious, much more so than that of the neighboring Papago and Yaqui Indians.

105 The Seri Indians appear to recognize a wide variety of mystical potencies and a number of zoic deities, all of rather limited powers. The Pelican, Turtle, Moon, and Sun seem to lead their thearchy. Creation is ascribed to the Ancient of Pelicans—a mythical bird of marvelous wisdom and melodious song—who first raised Isla Tassne, and afterward Tiburon and the rest of the world, above the primeval waters. Individual fetishes are used, and there is some annual ceremony at the time of ripening of cactus fruits, and certain observances at the time of the new moon. The most conspicuous ceremony is the girls' puberty feast. The dead are clothed in their finest raiment, folded and fastened in small compass like Peruvian mummies, placed in shallow graves, and covered with turtle-shells, when the graves are filled with earth and heaped with stones or thorny brambles for protection against beasts of prey. Fetishes, weapons, and other personal belongings are buried with the body, as well as a dish of food and an olla of water, and there are curious customs connected with the place of

105 sepulture. There is a weird, formal mourning for dead matrons, and
suggestions of fear of or veneration for the manes.

Seriland is surrounded with prehistoric works, telling of a numerous
172 population who successfully controlled the scant waters for irrigation,
built villages and temples and fortresses, cultivated crops, kept domestic animals, and manufactured superior fictile and textile wares; but (save possibly in one spot) these records of aboriginal culture cease at the borders of Seriland. In their stead a few slightly worn pebbles and bits of pottery are found here and there, deeply embedded in the soil and weathered as by the suns of ages. There are also a few cairns of cobbles marking the burial places, and at least one cobble mound of striking dimensions but of unknown meaning; and there are a few shell-mounds, one so broad and high as to form a cape in the slowly transgressing shoreline (Punta Antigualla), and in which the protolithic implements and other relics are alike from the house-dotted surface to the tide level, 90 feet below.

The absence of relics of a superior culture, and the presence of Seri relics throughout deposits of high antiquity, suggest that the tribe is indigenous to Seriland; and this indication harmonizes with the peculiar isolation of the territory, the lowly culture and warlike habits of the people, the essentially distinct language, the singular marriage custom, and the local character of the beast-gods. And all these features combine to mark the Seri as children of the soil, or autochthones.

Recent Explorations and Surveys

Present knowledge of Seriland and its inhabitants is based primarily
114 on the work of two expeditions by the Bureau of American Ethnology,
121 conducted in 1894 and 1895, respectively; and, secondarily, on researches
[122] into the cartography and literature (descriptive, historical, and scientific) of the region. Both of the expeditions were projected largely for the purpose of making collections among little-known native tribes in the interests of the National Museum, and the general ethnologic inquiries were ancillary to this purpose.

The 1894 expedition was directed chiefly toward work among the
Papago Indians in the vaguely defined territory known as Papagueria,
lying south of Gila river and west of the Sierra Madre in southwest-
[122] ern Arizona and western Sonora (Mexico). Outfitting at Tucson early
in October, the party moved southward, visiting the known Papago rancherias and seeking others, and thus defining the eastern limits of the Papago country. On the approach to the southern limits of the tribal range toward Rio Sonora, the evil repute of the Seri Indians sounded larger and larger, suggesting the desirability of scientific study of the tribe; and it was decided to attempt investigation.
114 Accordingly the party was reorganized at Hermosillo, and, with the
sanction of the Secretary of State and Acting Governor, Señor Don Ramón Corral, proceeded to Rancho San Francisco de Costa Rica,

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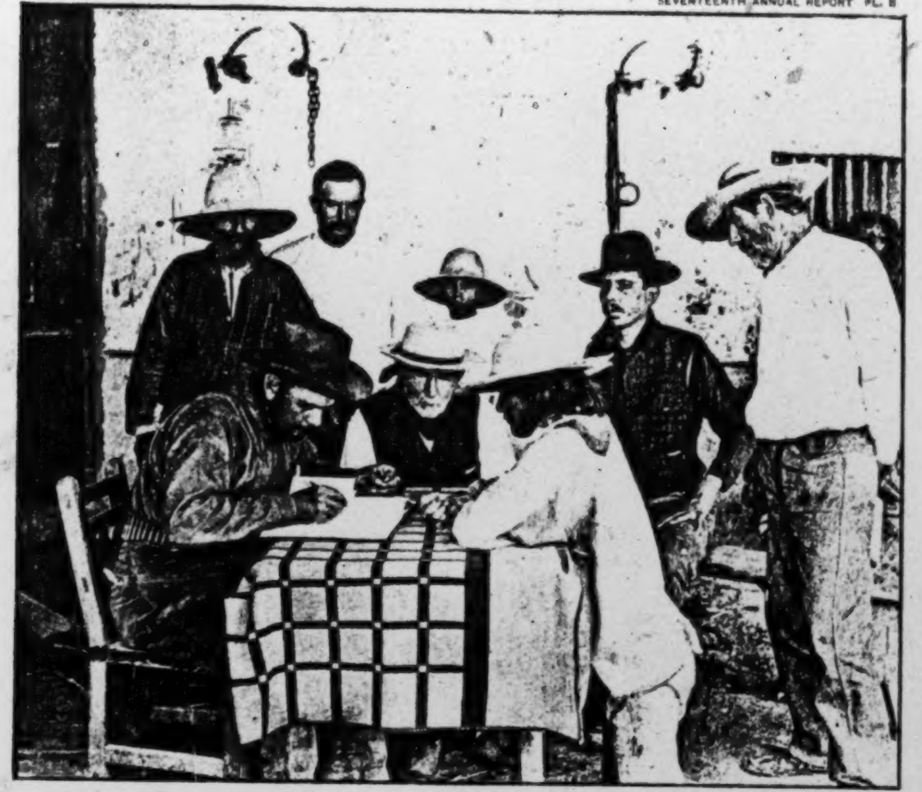
[FACING P. 13]



PASCUAL ENCINAS, CONQUEROR OF THE SERI

where a temporary Seri rancheria was found occupied by about sixty 114
of the tribe, including subchief Mashém, who speaks Spanish. In this
part of the work the expedition was accompanied by Señor Pascual
Encinas, the owner of the rancho visited, and doubtless the best [115]
informed white man concerning the habits, customs, personnel, and
habitat of the tribe. About a week was spent in intercourse with the
occupants of the rancheria, when the studies were brought to an end
through the illness of Señor Encinas, and the consequent necessity for
return to Hermosillo. The expedition then proceeded northwestward
and northward along a route so laid as to define the western limits of
Papagueria proper, and reached Tucson near the end of the year. In
addition to the leader, the party comprised Mr William Dinwiddie,
photographer; José Lewis, Papago interpreter, and E. P. Cunningham,
teamster. The outfit was furnished chiefly by Mr J. M. Berger, of San [115]
Xavier (near Tucson). On the visit to the Seri frontier the party was [122]
accompanied by Señor Encinas, Don Arturo Alvemar-Leon (who acted
as Spanish interpreter), and two or three attachés of Molino del Encinas.[1]

The second expedition was directed primarily toward investigation
of the Seri, and only incidentally to continuation of the researches [121]
among the Papago. Outfitting at Tucson in October (again with the
aid of Mr Berger), the expedition proceeded southward by a route [122]
different from those previously traversed, and carried forward a planetable route survey covering a considerable zone from the international
boundary at Sasabe to Rio Sonóra. Descending the previously
unmapped course of Rio Bacuache, the expedition reached the Rancho de
San Francisco de Costa Rica on December 1, 1895, and, although conditions were found unfavorable in that the Seri were on the warpath,
immediately prepared for the extension of the work into Seriland.

A preliminary trip was made into the mainland portion of the Seri
habitat, terminating at the crest of Johnson peak, the highest point in
Sierra Seri. The triangulation and topographic surveys were carried
over the territory traversed, and several points were fixed on Isla [126]
Tiburon; but the natives, agitated by a skirmish with vaqueros on
the frontier a day or two earlier, had withdrawn to remoter parts of the
territory, and were not encountered. The party returned to Costa Rica,
a rude boat was completed, transported across the desert via Pozo [122]
Escalante to Embarcadero Andrade, and launched in Bahia Kunkaak.
The surveys were extended to the southern portion of Sierra Seri and
Isla Tassne, and, after various difficulties and delays due to dearth of
fresh water, to gales, and to other causes, the party (enlarged for the purpose) finally landed on Tiburon. Many Seri rancherias were found on

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[1] The more noteworthy details of the organization and work of the two expeditions are set forth in the administrative reports of the Bureau for the fiscal years 1894-95 and 1895-96. Certain members of this party are shown in the accompanying half-tone, forming plate II: Señor Encinas seated at the end of the table; his son, Don Manuel (bareheaded), and Don Ygnacio Lozania at his right; a grandson behind him, and Señor Alvemar-Leon seated at his left, with Mashém kneeling over the table in the foreground.

114 both sides of Bahia Kunkaak and El Infiernillo. Some of these had been occupied almost to the hour of the visit, but the occupants had taken flight, leaving most of their unattached possessions behind, [123] and were not seen, though it was evident that, like wary birds and game animals, they kept the invaders in sight from points of vantage and hidden lairs. The eastern scarps and foot-slopes of Sierra Kunkaak were traversed extensively and repeatedly; its crest was crossed by Mr Johnson with a small party at a point west of Punta Narragansett, [126] and the triangulation and topographic sketching were connected with the work on the mainland and carried over practically the entire surface of the island, being tied to the work of the Hydrographic Office about the coasts. Then, despairing of finding the wary natives, and having exhausted food supplies, the party returned to the mainland and thence to Costa Rica, arriving in the evening of December 31.

The original party comprised, in addition to the leader, Mr Willard D. Johnson, topographer; Mr J. W. Mitchell, photographer; Hugh Norris, Papago interpreter, and José Contrares, teamster. The party engaged in the expedition to Sierra Seri comprised the leader, Messrs Johnson and Mitchell, Mr L. K. Thompson of Hermosillo, Don Andrés Noriega of Costa Rica, José Contráres, and two Papago Indian guards, Miguel and Anton, of Costa Rica. The Tiburon party was made up of the leader, Messrs Johnson and Mitchell, S. C. Millard of Los Angeles, and Señores Andrés Noriega and Ygnacio Lozania, together with Ruperto Alvarez, a Yaqui Indian guard, and Miguel, Anton, Mariana, Anton Ortiz, and Anton Castillo, Papago guards; while Hugh Norris and José Contrares, with half a dozen Papago guards and other attachés of the rancho at Costa Rica, maintained an intermittent supply station at Embarcadero Andrade. Señor Encinas cooperated in the work of the expedition, part of the time at Costa Rica and part at Molino del Encinas, his principal hacienda in the outskirts of Hermosillo; while Mr Thompson and Dr W. J. Lyons aided in the work, the former at both Hermosillo and Costa Rica and the latter at Hermosillo.

The return trip from Costa Rica lay via Hermosillo, and permitted the extension of the plane-table surveys to this longitude. While at the city advantage was taken of the opportunity to obtain linguistic [115] and other data from "El General" Kolusio, a full-blood Seri retained at the capital by the State for occasional duty as a Seri interpreter, who was obligingly assigned to the service of the party by Señor Don Ramón Corral, then governor of Sonora. At Hermosillo the leader of the expedition left the main party, which then proceeded northwestward and northward along the route followed by the 1894 expedition on the return journey, the party comprising Mr Johnson, in charge, with Messrs Mitchell and Millard, Hugh Norris, and José Contrares; and the plane-table surveys were continued and combined with the route surveys made on the outward journey.

The principal ethnologic results of both expeditions relating to the 114
Seri Indians are incorporated in the following pages; the data concerning the Papago are reserved for further study. The topographic surveys 128
of the 1895 expedition covered a zone averaging 50 miles in width, extending from the international boundary to somewhat beyond Rio Sonora. Mr Johnson, by whom these surveys were executed, was on furlough from the United States Geological Survey, and his resumption of survey work prevented the construction of finished maps, except that of Seriland (plate I), which forms but a small fraction of the area surveyed. The results of the remaining, and by far the greater, part of the topographic surveys are withheld pending completion of the inquiries concerning the Papago Indians.

The geographic nomenclature found requisite in the field and in 103
writing is partly new and partly restored, yet conforms with general
and local custom so far as practicable; and nearly all of the new names 114,
have been applied in commemoration of explorers or pioneers. Most 125
of the names pertaining to Seriland proper are incorporated in the map forming plate I; the others (including a few minor corrections) appear in the outline map forming figure 1, prepared after the larger sheet was printed.[1]

The following list of place-names is designed primarily to give the meaning and raison d'être of the nomenclature; with a single exception,[2] the names are Hispanized or Mexicanized in accordance with local usage.

Nomenclature of Seriland.[3]

*SERILAND: Extra-vernacular name of tribe, with English locative.

MAR DE CORTÉS (Sea of Cortés=Gulf of California): Customary Sonoran designation, applied by Ulloa (1539) in honor of Hernando Cortés, first discoverer of the gulf.

*PASAJE ULLOA (Ulloa passage): Generic Spanish; specific applied in honor of Captain Francisco de Ulloa, first navigator of the passage and the upper gulf, 1539.

*ESTRECHO ALARCON (Alarcon strait): Named in honor of Hernando de Alarcon, second navigator of the gulf, 1540.

EL INFIERNILLO (The Little Hell): Local designation, retained by the Hydrographic Office, U. S. N. (miswritten "Estrecho Infernillo" on larger map).

†BOCA INFIERNO (Mouth of Hell): A colloquial local designation (miswritten "Puerto Infierno" on larger map).

*BAHIA KUNKAAK (Kunkaak bay): Generic Spanish; specific the vernacular name of the Seri tribe (miswritten "Tiburon bay" on plates IV and V).

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[1] The larger map was drawn early in 1896, and a preliminary edition in the form of a photolithograph of the drawing was published in the National Geographic Magazine, vol. VII, 1896. It is proper—and historically desirable—to explain that while a considerable part of the copy for this paper was prepared at about the same time, circumstances prevented the completion of the manuscript and the final rectification of the nomenclature and bibliographic references until September 1, 1900.

[2] Johnson peak. It is proper to say that this name was applied by the author (and leader of the expedition) after the drawing was completed and submitted by Mr Johnson, as a meager tribute to his excellent work in the field and on the drawings named.

[3] An asterisk indicates new names, an obelisk old names restored or colloquial names adopted.

[128]

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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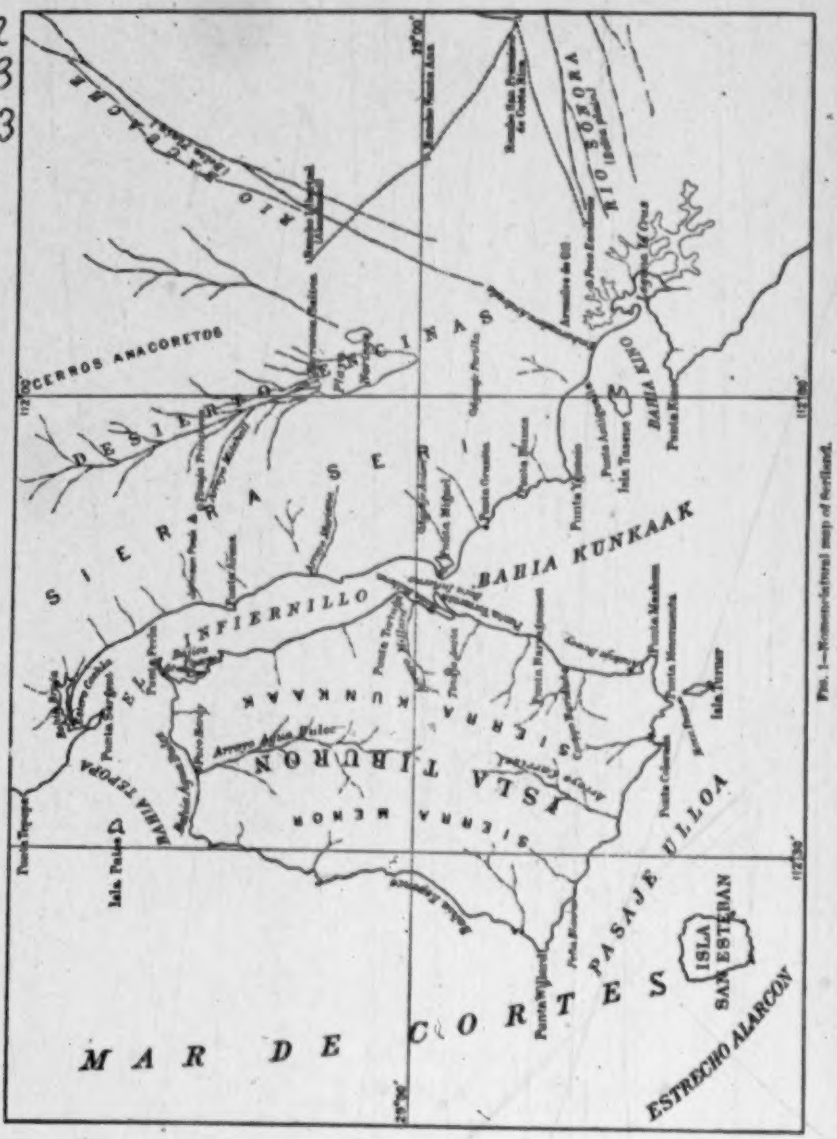
MAR DE CORTES
ESTRECHO ALARCON
ISLA SAN ESTEBAN
PASAJE ULLOA
ISLA TIBURON
SIERRA MENOR
SIERRA KUNKAAK
EL INFIERNILLO
BAHIA KUNKAAK
BAHIA TEPOPA
SIERRA SEME
DESIERTO ENCINAS
CERROS ANACORETOS
RIO BACUACHE
RIO SONORA
BAHIA KINO
Punta Tepopa
Isla Patos
Punta Sargent
Punta Perla
Punta Arena
Bahia Agua Dulce
Arroyo Agua Dulce
Punta Tortuga
Punta Miguel
Punta Granito
Punta Willard
Punta Narragansett
Punta Colorada
Punta Mashem
Punta Monumento
Isla Turner
Punta Ygnacio
Punta Antigualla
Isla Tassne
Punta Kino
Laguna la Cruz
Armadero de Gil
Rancho Santa Ana
Rancho San Francisco de Costa Rica
Playa Noriega
112°00'
112°30'
29°00'

FIG. 1—Nomenclatural map of Seriland.

103
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175 X

Bahia Kino (Kino bay): Long-standing name given in honor of Padre Eusebio Francisco Kino, an early Jesuit missionary (the "Bahia San Juan Bautista" of various early maps); adopted in Anglicized form by the Hydrographic Office, U. S. N.

†Bahia Tepopa (Tepopa bay): Specific a corruption of Tepoka, the extra-vernacular name of a local tribe related to the Seri; applied in 1746 by Padre Consag, and used by most navigators and cartographers of later dates, though it does not appear on the charts of the Hydrographic Office, U. S. N.

Bahia Agua Dulce (Freshwater bay): Named by Lieutenant R. W. H. Hardy, R. N., 1826; name retained (in Anglicized form) by Hydrographic Office, U. S. N. (The name is misplaced on Hardy's map, but the bay is correctly located in his text, p. 293.)

†Bahia Bruja (Witch bay): Named (in honor of his vessel) by its discoverer, Lieutenant Hardy, 1826.

*Bahia Espence (Spence bay): Named in honor of Pilot Tomás Espence (Thomas Spence), second circumnavigator of the island, who landed in the bay in 1844.

†Estero Cochla (Cockle inlet): Named by Lieutenant Hardy, 1826.

*Bajios de Ugarte (Ugarte shoals): Named in honor of Padre Juan de Ugarte, first visitor to the shoals and circumnavigator of Tiburon, 1721.

*Rada Ballena (Whale roadstead): Named from the stranding of a whale about 1887, an incident of much note among the Seri.

*Anclaje Dewey (Dewey anchorage): Named in honor of its discoverer, Commander (now Admiral) George Dewey, in charge of the surveys by the Hydrographic Office, U. S. N., 1873.

Laguna la Cruz (Lagoon of the Cross): Name adopted (Anglicized) by Hydrographic Office, U. S. N.; the "Laguna de los Cerraditos" (Lagoon of the Little Banks) of Colonel Francisco Andrade, 1844.

Isla Tiburon (Shark island): Name of long standing; used alternatively with "Isla San Agustin" since the seventeenth century, both names being apparently applied to Isla Tassne by several writers, and also to Isla Angel de la Guardia (the second largest island in the gulf) by Kino and others, while the present Tiburon was regarded as a peninsula.

Isla San Esteban (Saint Stephen island): Name of long standing; in consistent use since early in the seventeenth century.

*Isla Tassne (Pelican island): Name recast by the use of the Seri specific in lieu of the Spanish (Alcatraz), which is too hackneyed for distinctive use.

Isla Turner (Turner island): Name used (and probably applied in honor of Rear-Admiral Thomas Turner, U. S. N.) by the Hydrographic Office, U. S. N.

Isla Patos (Duck island—i. e., Island of Ducks): Name of long standing; adopted by the Hydrographic Office, U. S. N.

Roca Foca (Seal rock): Name used (and probably applied) by the Hydrographic Office, U. S. N.

Peña Blanca (White crag): Name used (and probably applied) by the Hydrographic Office, U. S. N.

Punta Tepopa (Tepopa point): Named (probably corruptly) from a local tribe related to the Seri; used by the Hydrographic Office, U. S. N.

Punta Sargent (Sargent point): Name applied by Lieutenant Hardy in 1826 to what is now known as Punta Tepopa; adopted for the minor point by the Hydrographic Office, U. S. N.

*Punta Perla (Pearl point): Name applied in commemoration of the traditional pearl fisheries of the vicinity.

*Punta Arena (Sand point): A descriptive designation.

*Punta Tortuga (Turtle point): Name applied in recognition of the extensive turtle fisheries of the Seri in the vicinity.

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*Punta Tormenta (Hurricane point): Name applied in recognition of the nearly continuous gales and tide-rips by which navigation is rendered hazardous, and by which the long sand-spit has been built.

Punta Miguel (Miguel point): Recast from "San Miguel point", partly through association with the name of a Papago guard accompanying the expedition of 1895; in the old form the name is of long standing, was probably applied by Escalante in 1700, and was adopted by the Hydrographic Office, U. S. N., 1873.

*Punta Granita (Granite point): A descriptive designation.

*Punta Blanca (White point): A descriptive designation.

*Punta Narragansett (Narragansett point): Specific (of Algonquian Indian derivation) applied in commemoration of the vessel employed in the surveys by the Hydrographic Office, U. S. N., in 1873, the point being that at which the commander of the *Narragansett* located the principal Seri rancheria of that time and made observations on the tribe.

*Punta Ygnacio (Ygnacio point): Specific applied in honor of Don Ygnacio Lozania, a trusted aid in the 1895 expedition, who had visited this point in connection with the Andrade expedition of 1844; described as "Dark bluff" on charts of the Hydrographic Office, U. S. N.

*Punta Antigualla (Antiquity point—i. e., Point of Antiquities): Name applied in recognition of a great shell-mound which has retarded the transgression of the sea and produced the point.

Punta Kino (Kino point): Name of long standing; specific in honor of the early missionary; used by the Hydrographic Office, U. S. N.

*Punta Mashém (Mashém point): Specific in honor of the Seri chief Mashém (sometimes called Francisco Estorga or Juan Estorga), who speaks Spanish and acted as Seri-Spanish interpreter in 1894.

Punta Monumenta (Monument point): Named by the Hydrographic Office, U. S. N.

Punta Colorada (Red point): Recast from the "Red Bluff point" of the Hydrographic Office, U. S. N.

Punta Willard (Willard point): Origin of name unknown; used by the Hydrographic Office, U. S. N.

*Embarcadero Andrade (Andrade landing): Named in memory of the embarcation for Tiburon of Colonel Francisco Andrade, 1844.

*Campo Navidad (Christmas camp): Named in memory of a camp occupied December 24-26 by the expedition of 1895.

*Sierra Seri (Seri range): Generic Spanish, specific the extra-vernacular tribe name.

*Sierra Kunkaak (Kunkaak range): Specific the vernacular tribe name.

*Sierra Menor (Minor range): A descriptive designation.

*Cerros Anacoretos (Anchorite hills): A designation suggested to Topographer Johnson by the solitary series of spurs rising singly or in scattered groups from the sheetflood-carved desert plain.

*Johnson peak: Name applied in commemoration of the first and only ascent of the peak, and of its occupation as a survey station, December 7 and 8, 1895, by Willard D. Johnson, accompanied by John Walter Mitchell and Miguel (Papago Indian).

*Desierto Encinas (Encinas desert): Generic Spanish, specific in honor of the intrepid settler on the outskirts of the desert, Señor Pascual Encinas.

*Playa Noriega (Noriega playa): Generic Spanish, specific in honor of Don Andrés Noriega, kinsman of Señora Anita Encinas, a resident on the outskirts of the desert, and the leading Mexican aid in the expedition of 1895.

*Arenales de Gil (Gil sandbanks): Generic Spanish, specific in honor of Fray Juan Crisóstomo Gil de Bernabe, sole missionary to Seriland, massacred at this point in 1773.

*Rio Sonora (Sonora river): Generic Spanish, specific a long standing and originally colloquial corruption of Señora, a designation said to have been applied by Spanish pioneers to a hospitable native chieftainess; afterwards apparently fixed through the name of an early mining camp and garrison and perhaps by similarity to a local aboriginal (Opata) term connoting maize, i. e., sonot. 103 114

Rio Bacuache (Bacuache river): Name of long standing; specific doubtless from the Opata term *bacot*, "snake", with a locative termination, i. e., "Snake place". 175 +

†Arroyo Carrizal (Reedy arroyo): Generic and specific Spanish; colloquial designation used by the Seri chief Mashém in describing the island; a traditional name of long standing.

†Arroyo Agua Dulce (Freshwater arroyo): A traditional name like the former, also used by Mashém.

*Arroyo Millard (Millard arroyo): Named in memory of S. C. Millard, aid and interpreter in the expedition of 1895 (died 1897).

*Arroyo Mariana (Mariana arroyo): Named in honor of Mariana (Papago Indian), a guard accompanying the 1895 expedition, who had once approached this arroyo on a hunting expedition.

*Arroyo Mitchell (Mitchell arroyo): Named in honor of John Walter Mitchell, photographer of the 1895 expedition.

†Pozo Escalante (Escalante well): Generic Spanish, specific in honor of Sergeant Juan Bautista de Escalante, the first Caucasian to cross El Infiernillo (in 1700), who is reputed to have dug the shallow well still existing; the name has been retained ever since alternatively with "Agua Amarilla" (Yellow water); doubtless the "Carrizal" of certain early maps; the site of the only mission ever established in Seriland, and of the massacre of Fray Crisóstomo Gil in 1773.

*Pozo Hardy (Hardy well): Named in honor of Lieutenant R. W. H. Hardy, R. N., second known Caucasian visitor to the spot, 1826.

*Aguaje Anton (Anton water, or water-hole): Generic a common Mexican term; specific applied in memory of Anton (Papago Indian), a guard and visitor to the spot in the expedition of 1895.

*Aguaje Parilla (Parilla water): A traditional water (not found by the expedition of 1895) named in memory of Colonel Diego Ortiz Parilla, the vaunted destroyer of the Seri in 1749, whose imposing expedition may have reached this point.

*Barranca Salina (Saline gorge): Generic colloquial Mexican, specific denoting the character of the practically permanent water; the designation applied by Mexican vaqueros and Papago hunters, who occasionally visit the locality.

*Tinaja Anita (Anita basin): Generic a useful Mexican term for a water-pocket, or rock basin containing water supplied by storms or seepage; specific a tribute to Anita Newcomb McGee, M. D., Actg. Asst. Surg. U. S. A.; perhaps the "Aguaje de Andrade" of 1844.

*Tinaja Trinchera (Entrenched basin): Specific a common Mexican term for the ancient entrenchments found on many mountains of Papagueria; applied in recognition of a few low, loose-laid stone walls about the tinaja, the only structures of the kind known in Seriland.

Rancho San Francisco de Costa Rica: Name applied by the founder, Señor Pascual Encinas, about 1850.

Rancho Santa Ana: Name applied by the founder, Señor Encinas, about 1870.

Rancho Libertad: Name applied by the founder, Señor Encinas, about 1875.

The fairly full geographic nomenclature of Seriland merely expresses the necessity for place-names, felt in some measure by all intelligent beings, and realized especially by explorers and describers of the region. Excepting the ranchos and perhaps Pozo Escalante, they denote natural features only, and, with the same exceptions, the features are seen but rarely or from great distances by enlightened men. Despite 000

Despite

137 the wealth of place-names and the strongly accentuated configuration which the nomenclature expresses, Seriland is one of the most hopeless deserts of the American hemisphere.

ACKNOWLEDGMENTS

122 Since most of the field work of the two expeditions lay in the neighboring Republic of Mexico, it became necessary to ask official sanction for the operations from the Mexican government; and it is a pleasure to say that every possible privilege and courtesy were extended by both federal and state officials. Especial acknowledgments are due to 000 the Mexican minister (and afterward ambassador) to the United States, his Excellency Don Mateo Romero (now deceased); to the Ministro de Fomento of the Mexican Republic, Excelencia Don Fernando Leal; and to the governor of the State of Sonora, Señor Don Ramón Corral. Equal acknowledgments are due to various United States officials, notably Honorable W. Woodville Rockhill, First Assistant Secretary of State when the expeditions were planned; and it is a pleasure to advert to the active interest taken in both expeditions by Honorable S. P. Langley, Secretary of the Smithsonian Institution, and to the careful attention given the 1894 expedition by the late Dr G. Brown Goode, Assistant Secretary of the Institution.

Mr Willard D. Johnson did invaluable service in connection with 114 the second expedition, particularly in the execution of surveys and the 126 construction of maps in inimitable style. Mr William Dinwiddie is to be credited with the excellent photographs made during the 1894 expedition, with the representation of the devices used in Seri face-painting, and with various other aids to the investigation; while Mr J. W. Mitchell is to be credited with the photographs made on Isla Tiburon, and with other contributions to the success of the 1895 expedition. 000 Acknowledgments are due also to all of the participants in both expeditions, whose names appear in other paragraphs. Their contributions were not primarily intellectual, yet were of a kind and amount to be forever remembered among men who have worked and hungered and thirsted and stood guard together. The deepest debt connected with the field work is to the now venerable but ever vigorous pioneer, Señor Pascual Encinas; and no small part of this debt goes over to his estimable spouse, Señora Anita Encinas, who twice traversed the long road from Hermosillo to Costa Rica in the interest of the 1895 expedition.

The scientific results of the researches have been enriched by invaluable contributions from Director Powell's store of ethnologic knowledge, and by suggestions from Messrs Frank Hamilton Cushing, F. W. Hodge, James Mooney, and other collaborators in the Bureau of American Ethnology. The qualities of the colored illustrations are 114 due largely to the artistic skill of Mr Wells M. Sawyer, by whom they were designed, and of Mr DeLancey Gill, by whom the proofs were revised. The Spanish translations are due chiefly to Colonel F. F.

Hilder, ethnologic translator of the Bureau, partly to Mr Emanuele 114
Fronani; though neither can be charged with errors of interpretation or of Englishing, both finally shaped by the author. The somatic determinations and discussions were by Dr Aleš Hrdlička, of New York; the tests for arrow poison were made by Dr S. Weir Mitchell, of Philadelphia; while the philologic comparisons were made almost wholly (with notable thoroughness and perspicacity, and in such wise as to illustrate the wealth and utility of the linguistic collections of the Bureau) by Mr J. N. B. Hewitt. Finally, it has become due, probably for the 000
first time in the nearly four centuries of their history, to make public acknowledgment of services by Seri Indians, viz, subchief Mashém, the real sponsor for the Bureau vocabulary and many other data, and "El General" Kolusio, the outlaw interpreter of Hermosillo and contributor to certain historical identifications.

HABITAT

LOCATION AND AREA

131 Seriland, the home from time immemorial of the Seri Indians, lies in northwestern Mexico, forming a part of the State of Sonora. It comprises Tiburon island, the largest and most elevated insular body in Gulf of California, together with a few islets and an adjacent tract of mainland; the center of the district being marked approximately by the intersection of the parallel of 29° with the meridian of 112°. The territory is divided by the narrow but turbulent strait, El Infiernillo. It is bounded on the west and south by the waters of the gulf with its eastward extensions to Kino bay, on the east by a nearly impassable desert, and on the north by a waterless stretch of sandy plains and rugged sierras 50 to 100 miles in extent.

Tiburon island is about 30 miles in length from north to south and 12 to 20 miles in width; its area, with that of the adjacent islets, is barely 500 square miles. The mainland tract held by the Seri is without definite boundary; measured to the middle of the limiting desert on the east and halfway across the waterless zone on the north, its area may be put at 1,500 square miles. To this land area of 2,000 square miles may be added the water area of the strait, with its northern and southern embouchures, and the coastwise waters habitually navigated by the Seri balsas as far as Kino bay, making half as much more of water area. Such is the district which the Seri claim and seek to control, and have practically protected against invasion for nearly four centuries of history and for uncounted generations of prehistory.

PHYSICAL CHARACTERISTICS

133 Seriland forms part of a great natural province lying west of the Sierra Madre of western Mexico and south of an indefinite boundary about the latitude of Gila river, which may be designated the Sonoran province; it differs from Powell's province of the Basin ranges in that it opens toward the sea, and also in other respects; and it is allied in many of its characteristics to the arid piedmont zone lying west of the Andes in South America.

In general configuration the province may be likened to a great roof-slope stretching southwestward from a comb in the Sierra Madre to a broad eaves-trough forming Gulf of California, the slope rising steeper toward the crest and lying flatter toward the coast; but the expanse is warped by minor swells, guttered by waterways, and dormered by outlying ranges and buttes. The most conspicuous inequality of the slope 133 (partly because of its coincidence with tide-level) is offered by the rugged ranges of Seriland. These may be considered four in number, all approximately parallel with each other and with the coast; the first is a series of eroded remnants (Cerros Anacoretos) from 600 to 1,200 feet in height; the second is the exceedingly rugged Sierra Seri, culminating in Johnson peak 5,000 feet above tide; the third is Sierra Kunkaak, attaining about 4,000 feet in its highest point; the fourth is Sierra Menor, some 2,000 feet high, with the northern extremity sliced off obliquely by marine erosion. The principal arm of Desierto Encinas lies between the first two ranges, El Infiernillo separates the second and third, while a subdesert valley divides the third from the fourth. The valleys correspond more closely than the ranges; if the land level were 100 feet higher the strait and its terminal bays would become an arid valley like the others, while if the sea-level were 500 feet higher the four ranges would become separate islands similar to Angel de la Guarda and others in the gulf.

The Sonoran province is notably warm and dry. The vapor-laden 132 air-currents from the Pacific drift across it and are first warmed by conduction and radiation from the sun-scorched land, to be chilled again as they roll up the steeper roof-slope to the crest; and the precipitation flows part way down the slopes, both eastward and westward from the Sierra Madre—literally the Mother (of waters) range. A climatal characteristic of the province is two relatively humid seasons, coinciding with the two principal inflections of the annual temperature-curve, i. e., in January-February and July-August, respectively. In the absence of meteorologic records the temperature and precipitation may be inferred from the observations at Yuma and Tucson,[1] which are among the warmest and driest stations in America, or indeed in the world; though it is probable that such points as Caborca, Bacuachito, and Hermosillo are decidedly warmer and perhaps slightly moister than Yuma. The ordinary midday summer temperature at these points may be estimated at about 110° in the shade (frequently rising 5° or 10° higher, but dropping 20° to 30° in case of cloudiness); the night temperature at the same season is usually 50° to 75°, though during two-thirds of the year it is liable to fall to or below the freezing point. The sun temperature is high in comparison with that measured in the shade, the exposed thermometer frequently rising to 150° or 160°, according to its construction, while black-finished metal becomes too hot to be handled, and dark sand and rocks literally scorch unprotected feet. The leading characteristic of the temperature is the wide diurnal range and the relatively narrow annual range; another characteristic is the uniformity, or periodic steadiness, of the maxima, coupled with variability and nonperiodicity of the minima.

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[1] The following monthly and annual meteorologic summaries, compiled from United States Weather Bureau records at these stations, have been kindly furnished by Prof. Willis L. Moore, Superintend-

132 The precipitation on the Sonoran province is chiefly in the form of rain; in the winter humid season snow falls frequently on the Sierra Madre and rarely on the outlying ranges; in both humid seasons (and in humid spots at all seasons) dew forms in greater or less abundance. Fog frequently gathers along the coast, especially during the winter and in the midsummer wet season, and sometimes drifts inland for miles. The mean annual precipitation may be estimated at 20 or 25 inches toward the crest and half as much toward the base of the high sierra; thence it diminishes coastward, probably to less than 2 inches; the mean for the extensive plains forming the greater part of the province may be estimated at 3 or 4 inches. The greater part of the precipitation is in

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ent of the Bureau. The tabulated records represent the observations of twenty years at Yuma and ten years at Tucson.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Absolute maximum temperature, Fahr.:													
Yuma	81	91	100	105	112	117	116	115	113	105	92	83	118
Tucson	84	85	95	101	106	111	110	109	106	97	89	82	111
Absolute minimum temperature, Fahr.:													
Yuma	22	25	31	40	44	52	61	60	50	41	31	25	22
Tucson	14	20	24	27	28	39	64	60	46	31	23	11	11
Mean maximum temperature, Fahr.:													
Yuma	65.1	70.7	72.8	85.4	92.2	101.2	106.7	104.9	99.6	87.2	75.0	67.4	86.6
Tucson	63.9	67.6	74.5	81.4	91.4	100.2	99.0	94.5	92.2	82.6	71.5	63.7	81.8
Mean minimum temperature, Fahr.:													
Yuma	42.0	46.1	50.6	55.1	61.4	68.3	77.2	77.6	70.5	58.5	48.6	44.7	58.4
Tucson	34.0	41.5	44.6	48.1	55.3	63.6	75.0	72.6	67.3	52.1	43.5	35.1	52.9
Mean temperature, Fahr.:													
Yuma	54.1	58.8	61.8	69.5	77.3	84.9	91.5	90.7	84.4	73.0	61.9	56.0	72.3
Tucson	49.4	53.3	59.5	65.6	74.0	82.3	87.2	83.5	77.7	68.5	57.0	52.9	67.4
Mean precipitation (inches and hundredths):													
Yuma	0.42	0.51	0.25	0.07	0.04	T.	0.14	0.32	0.15	0.26	0.29	0.46	2.94
Tucson	0.75	0.99	0.89	0.17	0.16	0.19	2.06	3.06	1.16	0.25	0.37	0.95	12.36
Prevailing winds:													
Yuma	N.	N.	W.	W.	W.	SW.	S.	S.	NE.	NE.	N.	N.	N.
Tucson	S.	S.	S.	W.	S.	SW.	SE.	SE.	S.	S.	S.	SE.	S.
Average cloudiness (scale 0-10):													
Yuma	2.4	2.4	2.4	1.6	1.3	0.8	1.6	2.8	1.1	1.3	1.7	2.5	1.8
Tucson	3.0	3.3	3.2	1.8	1.6	1.5	4.5	4.4	1.9	1.6	1.6	2.0	2.6

local storms, frequently accompanied by thunder-gusts or sudden tempests, though cold drizzles sometimes occur, especially at the height 132 of the winter humid season. Except where the local configuration is such as to affect the atmospheric movements, the distribution of precipitation is erratic, in both time and space; some spots may receive half a dozen rains within a year, while other spots may remain rainless for several years; and the wet spot of one series of years may be the dry spot of the next.

The climatal features of Seriland are somewhat affected by the pronounced topographic features of the district. Snow sometimes falls on Sierra Seri, and probably on Sierra Kunkaak; gales gather about the rugged ranges at all seasons, and sometimes produce precipitation out of season; the extreme heat of midday and midsummer is tempered by the proximity of the tide-swept gulf; and since most of the local derangements tend to augment precipitation and reduce temperature, it would seem safe to estimate the mean annual rainfall of the tract at 4 or 5 inches, and the mean temperature at about 70°, with a mean annual range of some 30° and an extreme diurnal range of fully 80°.

The configuration and climate combine to give distinctive character to the hydrography of the Sonoran province. The melting snows and 133 more abundant rains of the high sierras form innumerable streams flowing down the steeper slopes toward the piedmont plains, or soak into the pervious rocks to reappear as springs at lower levels; sometimes the streams unite to form considerable rivers, flowing scores of miles beyond the mountain confines; but eventually all the running waters are absorbed by the dry sands of the plains or evaporated into the drier air; and from the mouth of the Colorado to that of the Yaqui, 500 miles away, no fresh water ever flows into the sea. During the winter wet season, and to a less extent during that of summer, the mountain waterways are occupied by rushing torrents, rivaling great rivers in volume, and these floods flow far over the plains; but during the normal droughts the torrents shrink to streamlets purling among the rocks, or give place to blistering sand-wastes furlongs or even miles in width and dozens of miles in length, while beyond stretch low, radially scored alluvial fans, built by the great freshets of millenniums. Only a trifling part of the rainfall of the plains ever gathers in the waterways heading in the mountains, and only another small part gathers in local channels; the lighter rains from higher clouds are so far evaporated in the lower strata of the air as to reach the earth in feeble sprinkles or not at all; the product of moderate showers is absorbed directly by earth and air; while the water of heavy rains accumulates in mud-burdened sheets, spreading far over the plains, flowing sluggishly down the slopes, yet suffering absorption by earth and air too rapidly to permit concentration in channels. These moving mud-blankets of the plains, or sheetfloods,[1] are often supplemented by

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[1] Defined and described in Sheetflood Erosion, Bull. Geol. Soc. Am., vol. viii, 1897, p. 87.

133 the discharge from the waterways of adjacent sierras and buttes; they are commonly miles and frequently dozens or scores of miles in width, and the linear flow may range from a fraction of a mile to scores of miles according to the heaviness of the rainfall and the consequent dilution of the mud. Such sheetfloods, especially those produced by considerable rains, are characteristic agents of erosion throughout most of the province; their tendency is to aggrade depressions and corrade laterally, and thus to produce smooth plains of gentle slope interrupted only by exceptionally precipitous and rugged mountain remnants. A part of the sheetflood water joins the stronger mountain-born streams, particularly toward the end of the great storm whereby earth and air are saturated; another part forms ground-water, which slowly finds its way down the slopes toward the principal valleys, perhaps to reappear as springs or to supply wells. These with certain other conditions determine the water supply available for habitation throughout Seriland and adjacent Papagueria.

Another condition of prime importance arises in a secular tilting of the entire province southwestward. This tilting is connected with the upthrust of the Sierra Madre and the uplifting of the plateau country and the southern Rocky mountain region north of the international boundary. Its rate is measured by the erosion of the Grand Canyon of the Colorado and other gorges; and its dates, in terms of the geologic time-scale, run at least from the middle Tertiary to the present, or throughout the Neocene and Pleistocene. Throughout this vast period the effect of the tilting in the Sonoran province has been to invigorate streams flowing southward, and to paralyze streams flowing toward the northerly and easterly compass-points; accordingly the streams flowing toward the gulf have eroded their channels effectively during the ages, and have frequently retrogressed entirely through outlying ranges; so that throughout the province the divides seldom correspond with the sierra crests.

[131] A typical stream of the province is Rio Bacuache, one of the two practicable overland ways into Seriland (albeit never surveyed until traversed by the 1895 expedition). Viewed in its simple geographic aspect, this stream may be said to originate in a broad valley parallel with the gulf and the high sierra, 200 miles northeast of Kino bay; its half-dozen tributary arroyos (sun-baked sand-washes during three hundred and sixty days and mud-torrents during five days of the average year) gather in the sheetflood plain and unite at Pozo Noriega, where the ground-water gives permanent supply to a well; then the channel cleaves a rocky sierra 3,000 feet high in a narrow gorge, and within this canyon the ground-water gathered in the valley above seeps to the surface of the sand wash and flows in a practically permanent streamlet throughout the 4 or 5 miles forming the width of the sierra; then the liquid sinks, and 25 miles of blistering sand-wash (interrupted by a single lateral spring) stretch across the next valley

133 to Pueblo Viejo, where another sierra is cleft by the channel, and where the water again exudes and flows through a sand-lined rock-bed (figure 2). In the local terminology this portion alone is Rio Bacuache, the upper stretches of the waterway bearing different names; it supplies the settlement and fields of Bacuachito, flowing above the sands 5 to 15 miles, according to season; then it returns to the sand-wash habit for 50 miles, throughout much of which distance wells may find supply at increasing depths; finally it passes into the delta phase, and enters northeastern Seriland in a zone marked by exceptionally vigorous mesquite forests. Normally the 200 miles of streamway is actual stream only in two stretches of say 5 miles each, some 25 miles apart, and the farther of these stops midway between the head of the channel and the open sea toward which it trends and slopes; but during and after great storms it is transformed into a river approaching the Ohio or the Rhine in volume, flowing tumultuously for 150 miles, and finally sinking in the sands of Desierto Encinas, 30 to 50 miles from the coast. Viewed with respect to genesis, Rio Bacuache has responded to the stimulus of the southwestern tilting, and has retrogressed up the slope through two sierras, besides minor ranges and 100 miles of sheetflood-carved plains; while the debris thus gathered has filled the original gorge to a depth of hundreds of feet, and has overflowed the adjacent sheetflood-flattened expanses to form the great alluvial fan of eastern Seriland. The genetic conditions explain the distribution

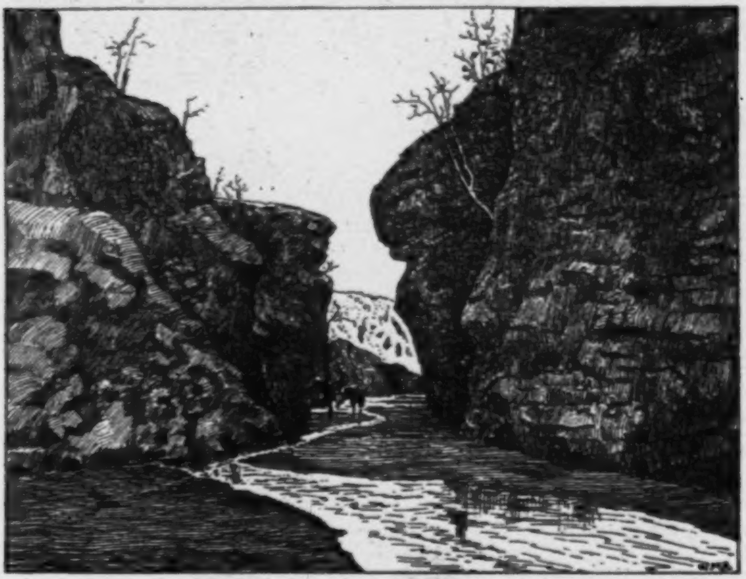

FIG. 2—Gateway to Seriland—gorge of Rio Bacuache.

133 of the water: the product of the semiannual storms suffices to form a meager supply of ground water, which is diffused in the sands and softer rocks of the plains, and concentrated in the narrow channels carved through the dense granites of the sierras; and enough of the flow passes the barriers to supply deep wells in the terminal fan, as at the frontier ranchos Libertad (abandoned) and Santa Ana, just as the subterranean seepage from the Sonora more richly supplies the deep well at San Francisco de Costa Rica. In these lower reaches the mineral salts, normally present in minute quantities, are concentrated so that the water from these wells is slightly saline, while deeper in the desert the scanty water is quite salt.

133 312 In Seriland proper the distribution of potable water is conditioned by the meager precipitation, the local configuration (shaped largely by sheetflood erosion), and the disturbance of equilibrium of the scanty ground-water due to the tilting of the province. The most abundant permanent supply of fresh water is that of Arroyo Carrizal, which is fed by drainage and seepage from the broad and lofty mass of pervious rocks forming the southern part of Sierra Kunkaak, the abundant supply being due to the fact that the eastern tributaries are energetically retrogressing into the mass in deep gorges which effectually tap the water stored during the semiannual storms. The arroyo and valley of Agua Dulce are less favorably conditioned by reason of a trend against the tilting of the province and by reason of the narrower and lower mass of tributary rock in the northern part of the range, and the flow is impermanent, as indicated by the absence of canes and other stream plants; yet four explorers (Ugarte, 1721; Hardy, 1826; Espence, 1844; Dewey, 1875) reported fresh water, apparently in a shallow well tapping the underflow, at the embouchure of the arroyo. On the eastern slope of Sierra Kunkaak there are several arroyos which carry water for weeks or even months after the winter rains, and sometimes after those of summer; but the only permanent water—Tinaja Anita—is at the base of a stupendous cliff of exceptionally pervious and easily eroded rocks, so deeply cut that ground-water is effectually tapped, while an adjacent chasm—Arroyo Millard—is so situated that the cliff-faced spur of the sierra above the tinaja absorbs an exceptional proportion of the surface flowage from the main crest. The tinaja (figure 3) is permanent, as indicated by a canebrake some 20 by 50 feet in extent, and by a native fig and a few other trees—though the dry-season water-supply ranges from mere moisture of the rocks to a few gallons caught in rock basins within the first 50 yards of the head of the arroyo. No other permanent supplies of fresh water are known on the island, though there are a few rather persistent tinajas along the western base of Sierra Menor above Willard point.

On the mainland tract there is a cliff-bound basin, much like that of Tinaja Anita, at the head of Arroyo Mitchell and base of Johnson peak, christened Tinaja Trinchera; but the range is narrow and the rocks granitic, and hence the supply is not quite permanent.[1] A practically permanent supply of water is found in one or more pools or barrancas at the head of Playa Noriega in Desierto Encinas. The liquid lies in pools gouged by freshets in the bottoms of arroyos coming in from the northward, just where the flow is checked by the spread of the waters over the always saline playa; and, since they are modified by each freshet, they are sometimes deep, sometimes shallow, sometimes entirely sand-filled. When the barrancas are clogged, or when their contents are evaporated, coyotes, deer, horses, and vaqueros obtain water by excavating a few feet in the sand lining the larger arroyos. Commonly the barranca water is too saline for Caucasian palates save in dire extremity, but the salinity diminishes as the arroyos are ascended. An apparently permanent supply of saline and nitrous water is found in a 10-foot well, known as Pozo Escalante, or Agua Amarilla (yellow water), near the southern extremity of Desierto Encinas, reputed to have been excavated by Juan Bautista de Escalante in 1700, and still remaining open; its location is such that it catches the subterranean seepage from both Bacuache and Sonora rivers. The water is potable but not palatable. Among the vaqueros of San Francisco de Costa Rica there is a vague and ancient tradition of a carrizal-marked tinaja or arroyo (Aguaje Parilla) at the eastern base of the southern portion of Sierra Seri; and both vaqueros and Indians

Fig. 3—Tinaja Anita.

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[1] Tinaja Trinchera was entirely dry and without trace of carrizal in December, 1894.

133 refer to one or more saline barrancas about the western base of the same semirange, probably in Arroyo Mariana.

312 In brief, Arroyo Carrizal, Tinaja Anita, and Pozo Escalante are the only permanent waters, and Pozo Hardy, Barranca Salina, and Tinaja Trinchera the only subpermanent waters actually known to Caucasians in all Seriland, though it seems probable that permanent water may exist at Aguaje Parilla and in Arroyo Mariana, and impermanent supplies near Bahia Espence. There may be one or two additional places of practically permanent water in smaller quantity, and a few other places in which saline water might be found either at the surface or by slight excavation, and which may be approximately located by inspection of the map under guidance of the principles set forth in the preceding paragraphs; but this would seem to be the limit of trustworthy water supply. During the humid seasons the waters are naturally multiplied, yet it is improbable that any of the arroyos except Carrizal and Agua Dulce and a few minor gulches along the more precipitous shores shed water into the gulf save at times of extraordinary local flood.[1]

133 The geologic structure of the Sonoran province is complex and not well understood. So far as the meager observations indicate, the basal rocks are granites, frequently massive and sometimes schistose, sometimes intersected by veins of quartz, etc. The granitic mass is upthrust to form the nuclei of Sierra Madre and other considerable ranges; it also approaches the surface over large areas of plains. Resting unconformably on the granites lie heavy deposits of shales and limestones, commonly more or less metamorphosed; these rocks outcrop on the slopes of most of the main ranges and form the entire visible mass of some of the lower sierras and buttes, while they, too, sometimes approach the surface of the sheetflood-carved plain. The rocks, both calcareous and argillaceous, combine the characters of the vast Mesozoic limestone deposits of eastern Mexico and the immense shale accumulations of corresponding age in California, and hence probably represent the later half of the Mesozoic. This is the only sedimentary series recognized in the province. Both the granites and the sedimentary beds are occasionally overlain by volcanic deposits, chiefly in the form of much-eroded lava-sheets and associated tuff-beds, which sometimes form considerable ranges and buttes (notably Sierra Kunkaak, of Isla Tiburon); these remnantal volcanic deposits are probably late Mesozoic or early Tertiary. Newer volcanics occur locally, forming mesas, as about Agua Nueva (40 miles northwest of Hermosillo), or even coulees apparently filling barrancas of modern aspect, as in the vicinity of Bacuachito,[2] or rising into cinder cones surrounded by

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113 [1] The physiographic features of the Sonoran province in general are treated in greater detail in a paper on Sheetflood Erosion, Bull. Geol. Soc. Am., vol. VIII, 1897, pp. 87-112, and in a paper on Papagueria, Nat. Geog. Mag., vol. IX, 1898, pp. 345-371; while certain local features are described in a paper on Seriland, prepared jointly with Willard D. Johnson, Nat. Geog. Mag., vol. VII, 1896, pp. 125-133. The aggregate available fresh water of Seriland is estimated on p. 181.

[2] Noted by Willard D. Johnson.

ejectamenta, as at Pico Pinacate, in northwestern Sonora. The various 133 rocks are usually bare or meagerly mantled with talus in the mountains; over the greater part of the plains they are commonly veneered with sheetflood deposits, ranging from a few inches to a few yards in thickness; while the central portions of the larger valleys are lined with alluvial accumulations reaching many hundreds of feet in thickness.

The clearly interpretable geologic history began with extensive degradation and eventual baseleveling of a granitic terrane in Paleozoic or early Mesozoic time; then followed the deposition of the shales and associated limestones during the later Mesozoic; next came elevation, accompanied or followed by corrugation, chiefly in folds parallel with the present coast, whereby the granite-based sierras were produced, and accompanied also by the earlier vulcanism to which the volcanic sierras owe their existence. A vast period of degradation ensued, during which the land stood so high as to induce greater precipitation than that of today and to permit the streams to carve channels far below the present level of tide, and during which the present general configuration was developed; then came the southwestward tilting and consequent climatal desiccation, the filling of the deeper valleys, the inauguration of sheetflood erosion, some local vulcanism, and the progressive shifting of the divides.

The geologic structure affects the hydrography, especially that factor determined by subterranean circulation, or ground-water; for the superficial sheetflood and alluvial deposits are highly pervious and many of the volcanics hardly less so, while the shales and limestones are but slightly pervious and the granites nearly impervious. The 134 geologic structure also determines the character of the soil with exceptional directness, since the dryness of the air and the dearth of vegetation reduce rock decay to a negligible quantity. The characteristically precipitous sierras and cerros are of naked ledges, save where locally mantled with a mechanical débris of the same rocks (much finer than the frost product of colder and humider regions); the soil of the normal plains is but the little-oxidized upper surface of sheetflood deposits made up of the mechanical debris of local rocks and varying in coarseness with the slope; while the soil of the valleys is detrital sand and silt, derived from tributary slopes, passing into adobe where conditions are fit, and essentially mechanical in texture and structure save where cemented by ground-water solutions at the lower levels.

FLORA

The flora of the Sonoran province affords a striking example of the 137 adjustment of vegetal life to an unfavorable environment. The prevailing vegetation is perennial, of slow growth and of stunted aspect; and it is not distributed uniformly but arranged in separate tufts or clusters, gathering into a nearly continuous mantle in wetter spots, though commonly dotting the plains sparsely, to completely disappear

137 in the driest areas. Nearly all of the plants have roots of exceptional length, and are protected from evaporation by a glazed epidermis and from animal enemies by thorns or by offensive odors and flavors; while most of the trees and shrubs are practically leafless except during the humid seasons. Grasses are not characteristic, and there is no sward, even in oases; but certain grasses grow in the shadow of the arborescent tufts and in the fields of the farmer ants, or spring up in scattered blades over the moister portions of the surface. The arborescent vegetation represents two characteristic types, viz, (1) trees and shrubs allied to those of humid lands, but modified to fit arid conditions; and (2) distinctive forms, evidently born of desert conditions and not adapted to a humid habitat, this type comprising the cacti and related forms, as well as forms apparently intermediate between the cacti and normal arborescent type. The various plants of the district, including those of the distinctive types, are communal or commensal, both among themselves and with animals, to a remarkable degree; for their common strife against the hard physical environment has forced them into cooperation for mutual support. The tufts or clusters in which the vegetation is arranged express the solidarity of life in the province; commonly each cluster is a vital colony, made up of plants of various genera and orders, and forming a home for animal life also of different genera and orders; and, although measurably inimical, these various organisms are so far interdependent that none could survive without the cooperation of the others.[1]

In Seriland proper, as in other parts of the Sonoran province, a prevailing tree is the mesquite (*Prosopis juliflora*); on the alluvial fan of Rio Sonora it grows in remarkable luxuriance, forming (with a few other trees) a practically continuous forest 20 to 40 feet in height, the gnarled trunks sometimes reaching a diameter of 2 or 3 feet; over the Rio Bacuache fan and much of the remaining plain surface it forms the dominant tree in the scattered vital colonies; and here and there it pushes well into the canyon gorges. The roots of the mesquite are of great length, and are said to penetrate to water-bearing strata at depths of 50 to 75 feet; its fruit consists of small hard beans embedded in slender woody pods. Associated with the mesquite in most stations are the still more scraggy and thorny cat-claw (*Acacia greggii*) and ironwood (*Olneya tesota*), both also yielding woody beans in limited quantity. Similarly associated, especially in the drier tracts, and characteristically abundant over the plains portions of Isla Tiburon, are the paloverdes (*Parkinsonia torreyana*, etc), forming scraggy, wide-branching, green-bark trees 5 to 15 feet high, and commonly 3 to 10 inches in diameter of trunk. Over the mountain sides, especially of Sierra Seri and Sierra Kunkaak, grow sparsely the only straight-trunk trees of the region, rooted in the rocks to the average number of a few score to the square

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[1] The vital characteristics of the region have been described in some detail in The Beginning of Agriculture, American Anthropologist, vol. VIII, 1895, pp. 350-375; The Beginning of Zooculture, American Anthropologist, vol. X, 1897, pp. 215-230; and Expedition to Seriland, Science, vol. III, 1896, pp. 493-505.

137 mile; this is the paloblanco (*Acacia willardiana*). Associated with it along rocky barrancas of permanent water supply is a fig tree (*Ficus palmeri*), which has a habit of springing from the walls and crests of cliffs, and sending white-bark roots down the cliff-faces to the water 50 or 100 feet below, and which yields a small, insipid, and woody fruit. Interspersed among the larger trees, and spreading over the intervening spaces, particularly in the drier and more saline spots, grow a number of thorny shrubs, much alike in external appearance and habit, though representing half a dozen distinct genera (*Cassia*, *Microrhamnus*, *Celtis*, *Krameria*, *Acacia*, *Randia*, *Stegnosperma*, *Frankenia*, etc), while considerable tracts are sparsely occupied by straggling tufts of the Sonoran greasewood, or creosote bush (*Larrea tridentata*), whose minute but bright green leafage relieves that prevailing gray of the landscape in which the lighter greens of the paloverde and cactus stems are lost.

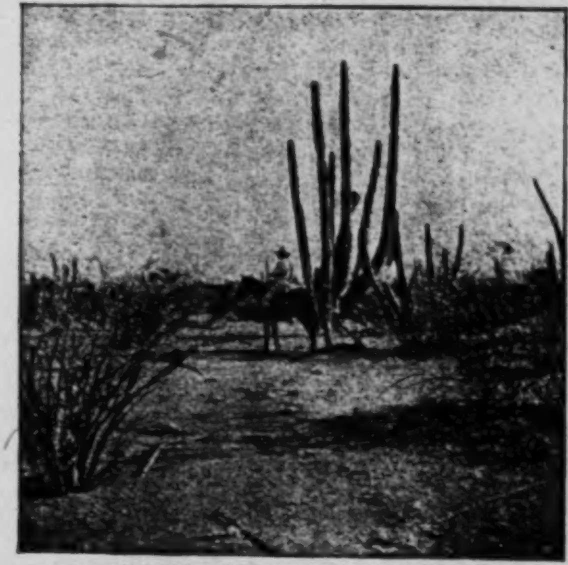

FIG. 4—Beyond Encinas desert—the saguesa.

Intermingling with the woody trees and shrubs in most stations, and replacing them in some, are the conspicuous and characteristic cacti in a score of forms. East of Desierto Encinas, and sometimes west of it, these are dominated by the saguaro (*Cereus giganteus*), though throughout most of Seriland the related saguesa (*Cereus pringleii?*) prevails. The saguaro is a fluted and thorn-decked column, 1 foot to 3 feet in diameter and 10 to 60 feet in height, sometimes branching into a candelabrum, while the still more monstrous saguesa (figure 4) usually consists of from three to ten such columns springing from a

137 single root; both are masses of watery pulp, revived and renewed during each humid season, and both flower in a crown of fragrant and brilliant blossoms at or near the top of column or branch, and fruit in fig-like tunas (or prickly pears) during late summer or early autumn. Ordinarily the saguesa, like the saguaro, is sparsely distributed; but there is an immense tract between Desierto Encinas and the eastern base of Sierra Seri in which it forms a literal forest, the giant trunks close-set as those of trees in normal woodlands. Hardly less imposing than the giant cactus is the wide-branching species known as pitahaya (*Cereus thurberi?*), in which the trunks may be ten to fifty in number, each 4 to 8 inches in diameter and 5 to 40 feet in height; and equally conspicuous, especially in eastern Seriland, is the cina (*Cereus schotti*), which is of corresponding size, and differs chiefly in the simpler fluting of the thorn-protected columns. Both the pitahaya and the cina flower and fruit like the saguaro, the tunas yielded by the former being especially esteemed by Mexicans as well as Indians. Another important cactus is the visnaga (*Echinocactus wislizeni lecontei*), which rises in a single trunk much like the saguaro, save that it is commonly but 3 to 6 feet in height and is protected by a more effective armature of straight and curved thorns; it yields a pleasantly acid, pulpy fruit, which may be extracted from its thorny setting with some difficulty; but its chief value lies in the purity and potability of the water with which the pulpy trunk is stored. The visnaga is widely distributed throughout the Sonoran province and beyond, and extends into eastern Seriland; it is rare west of Desierto Encinas and is practically absent from Isla Tiburon, where it may easily have been exterminated by the improvident Seri during the centuries of their occupancy. Most abundant of all the cacti, and less conspicuous only by reason of comparatively small size, is the cholla (an arborescent *Opuntia*); on many of the sheetflood-carved plains it forms extensive thickets 5 to 8 feet high, the main trunks being 2 to 6 inches in diameter, while dozens or hundreds of gaunt and thorn-covered branches extend 3 to 8 feet in all directions; and it occurs here and there throughout the district from the depths of the valleys and the coast well up to the rocky slope of the sierras. It yields quantities of fruit, somewhat like tunas, but more woody and insipid; this fruit is seldom if ever used for human food, but is freely consumed by herbivores. Much less abundant than the cholla is the nopal, or prickly pear; and there are various other opuntias, often too slender to stand alone and intertwined with stiffer shrubs which lend them support, and many of these yield small berry-like tunas. Another characteristic cactus, widespread as the cholla and abundant in nearly all parts of Seriland save on the rocky slopes, is the okatilla (*Fouquiera splendens*). It consists of half a dozen to a score of slender, woody, and thorn-set branches radiating from a common root, usually at angles of 30° to 45° from the vertical, and ordinarily reaching heights of 10 to 20 feet.

The pulp masses of the larger cacti, especially the saguaro, saguesa, pitahaya, and cina, are supported by woody skeletons in the form of vertical ribs coincident with the external flutings; within a few years after the death and decay of these desert monsters the skeletons weather out, and the vertical ribs form light and strong and approximately straight bars or shafts, valuable for many industrial purposes; while the slender arms of okatilla are equally valuable, in the fresh condition after removal of the spiny armament, and in the weathered state without special preparation.

On many of the higher plain-slopes, especially in eastern Seriland, there are pulpy stemmed shrubs and bushes, sometimes reaching the dignity of trees, which present the normal aspect of exogenous perennials during life, but which are so spongy throughout as to shrink into shreds of bark-like debris shortly after death. These are the torotes of the Sonoran province—common torote (*Jatropha cardiophylla*), torote amarillo (*Jatropha spathulata*), torote blanco (*Bursera microphylla*), torote prieto (*Bursera laxiflora*), torotito (*Jatropha canescens ?*), etc. These plants grow in the scattered and scraggy tufts characteristic of arid districts (a typical torote tuft appears in left foreground of figure 4); they are protected from evaporation by the usual glazed epidermis, and maintained by the water absorbed during the humid seasons; but they are thornless and are protected from animal enemies by pungent odors, and at least in some cases by toxic juices. Like various plants of the province they are measurably communal—indeed, the torotito appears to be dependent on union with an insect for reproduction, like certain yuccas, and like the cina and (in some degree at least) the saguaro and other cacti.

Along the lower reaches of Rio Bacuache, and in some of the deeper gorges of Sierra Seri and Sierra Kunkaak, grow a few veritable trees of moderately straight trunk and grain and solid wood, such as the guaiacan (*Guaiacum coulteri*) and sanjuanito (*Jacquinia pungens*); both of these fruit, the former in a wahoo like berry of medicinal properties, and the latter in a nut, edible when not quite ripe and forming a favorite rattle-bead when dry. On the flanks of such gorges the slender-branched baraprieta (*Cæsalpinia gracilis*) grows up in the shelter of more vigorous shrubs, its branches yielding basketry material, while its fruit is a woody bean much like that of the cat-claw. In like stations there are occasional clumps of yerba mala or yerba de flecha (*Sebastiana bilocularis*), an exceptionally leafy bush growing in straight stems suitable for arrowshafts, and alleged to be poisonous from root to leaf—with inherent probability, since the plant is without the thorny armature normal to the desert. Along the sand-washes, especially about their lower extremities wet only in floods, springs a subannual plant (*Hymenoclea monogyra*) which shrinks to stunted tussocks after a year or more of drought, but flourishes in close-set fens after floods; though of acrid flavor and sage-like odor, it is eaten by herbivores in

137 time of need, and it yields abundant seeds, consumed by birds, small animals, and men. About all of the permanent waters not invaded by white men and the white man's stock there are brakes of cane or carrizal (*Phragmites communis* ?); the jointed stems are half an inch to an inch in thickness and 8 to 25 feet in height; the seeds are edible, while the stems form the material for balsas and afford shafts for arrows, harpoons, fire-sticks, etc., and the silica-coated joints may be used for incising tough tissues.

The coasts of Seriland, both insular and mainland, are skirted by zones of exceptionally luxuriant shrubbery, maintained chiefly by fog moisture. Along the mountainous parts of the coast the zone is narrow and indefinite, but on the plains portions it extends inland for several miles with gradually fading characters; this is especially true in the southern portion of Desierto Encinas, where the fog effects may be observed in the vegetation 12 or 15 miles from the coast. Most of the fog-fed species are identical with those of the interior, though the shrubs are more luxuriant and are otherwise distinctive in habit. On the Tiburon side of gale-swept El Infiernillo, and to some extent along other parts of the coast, some of these shrubs (notably *Maytenus phyllanthroides*) grow in dense hedge-like or mat-like masses, often yards in extent and permanently modeled by the wind in graceful dune-like shapes. Somewhat farther inland the flatter coastwise zones of Tiburon are rather thickly studded with shrubby clumps from 6 inches to 2 feet high, made up of *Frankenia palmeri* with half a dozen minor communals; while still farther inland follows the prevailing Sonoran flora of mesquite, scrubby paloverde, and chaparral (*Celtis pallida*), etc, only a little more luxuriant than the normal.

Throughout Seriland proper, and especially in the interior valleys of Tiburon, grasses are more prevalent than in other portions of the Sonoran province, their abundance doubtless being due to the rarity of graminivorous animals during recent centuries.

FAUNA

136 Considered collectively, the fauna of the Sonoran province is measurably distinctive (though less so than the flora), especially in the habits of the organisms. The prevailing animals, like the plants of extraneous type, evidently represent genera and species developed under more humid conditions and adjusted to the arid province through a long-continued and severe process of adaptation; and no fundamentally distinct orders or types comparable with the cacti and torotes of the vegetal realm are known. The prime requisite of animal life in the province is ability to dispense with drinking, either habitually or for long intervals, and to maintain structure and function in the heated air despite the exceptionally small consumption of water; the second requisite is ability to cooperate in the marvelously complete solidarity of animal and vegetal life characteristic of subdesert regions. No

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systematic studies have been made of special structures in the animal bodies adapting them to retention of liquids, either by storage (as in the stomach of the camel) or by diminished evaporation, though the prevalence of practically nonperspiring mammals, scale-covered reptiles, and chitin-coated insects suggests the selection, if not the development, of the fitter genera and species for the peculiar environment. Much more conspicuous are the characters connected with cooperation in the ever severe but never eliminative strife for existence in the subdesert solidarity; the mammals are either exceptionally swift like the antelope, exceptionally strong like the local lion, exceptionally pugnacious and prolific like the peccary, or exceptionally capable of subsisting on waterless sierras like the bura and mountain goat; the reptiles are either exceptionally swift like the rainbow-hued lizards, exceptionally armed like the sluggish horned toads, exceptionally venomous like the rattlesnake, or exceptionally repulsive, if not poisonous, like the Gila monster; even the articulates avoid the mean, and are exceptionally swift, exceptionally protective in form and coloring, exceptionally venomous like the tarantula and scorpion and centipede, or exceptionally intelligent like the farmer ant and the tarantula-hawk; while there is apparently a considerable class of insects completely dependent on the cooperation of plants for the perpetuation of their kind, including the yucca moth and (undescribed) cactus beetle. Among plants the intense individuality (which is the obverse of the enforced solidarity) is expressed in thorns and heavily lacquered seeds and toxic principles; among animals it is expressed by chitinous armament, as well as by fleetness and fangs and deadly venom.

The larger land animals of Seriland proper are the mountain goat in the higher sierras, the bura (or mule-deer) and the white-tail deer on the mid-height plains and larger alluvial fans, with the antelope on the lower and drier expanses. Associated with these are the ubiquitous coyote, a puma, a jaguar of much local repute which roams the higher rocky sites, and a peccary ranging from the coast over the alluvial fans and mid-height plains of the mainland (though it is apparently absent from Tiburon). Of the smaller mammals the hare (or jackrabbit) and rabbit are most conspicuous, while a long-tail nocturnal squirrel abounds, its burrows and tunnels penetrating the plains of finer debris so abundantly as to render these plains, especially on Tiburon, impassable for horses and nearly so for men. The California quail and the small Sonoran dove are fairly common; a moderate number of small birds haunt the more humid belts, and there is a due proportion of Mexican eagles and hawks of two or three forms, with still more numerous vultures. Ants abound, dominating the insect life, while wasps and spiders, with various flies and midges, gather about the vital colonies of the drier plains and swarm in the moister belts. Horned toads and various lizards—bright-colored and swift, or earth-tinted and sluggish—are fairly abundant, while black-tail rattlesnakes

136 haunt the more luxuriant vegetation of fog zones, permanent waters, and cienegas. On the whole, the land fauna of Seriland is much like that of the province in general, though the various forms of life are less abundant than the average, since all (except the abounding squirrel) are sought for food by the omnivorous Seri; and the distribution, even when relatively abundant, is woefully sparse, as befits the scant and scattered vegetal foundation for the animal life.

Strongly contrasted with the meagerness of the land fauna is the redundant aquatic fauna of that portion of the gulf washing the shores of Seriland. Tiburon island is named from the sharks, said by some explorers to have been seen by thousands along its coasts; these voracious feeders find ample food in literal shoals and swarms of smaller fishes; a not inconsiderable number of whales have survived the early fisheries (one, estimated at 80 feet in length, was stranded in Rada Ballena about 1887); while schools of porpoises play about Boca Infierno and elsewhere, making easy prey of slower swimmers caught in the tide-rips and gale-swept breakers. Proportionately abundant and varied is the crustacean life; littoral mollusks cling to the ledges exposed along all the rocky coast stretches, and the entire beach from Punta Antigualla to Punta Ygnacio is banded by a practically continuous bank of wave-cast molluscan shells, the shell-drift being often yards in width and many inches in depth. Common crabs abound in many of the coves, and a large lobster-like crab frequently comes up from deeper bights and bottoms; oysters attach themselves to rocks and to the roots of shrubby trees skirting protected bays like Rada Ballena, while clams are numerous in all broad mud-flats, such as those of Laguna la Cruz; and the pearl oyster was fished for centuries toward Punta Tepopa, until the ferocity of the Seri put an end to the industry. Especially abundant and large are the green turtles on which the Seri chiefly subsist, leaving the shells scattered along the shore and about rancherias in hundreds; while two land tortoises (*Gopherus agassizii* and *Cinosternum sonorense*) range about the margins of the lagoons, and one of these is alleged to enter the water freely.

The abundance of water-fowl is commensurate with that of the submarine life. The pelican leads the avifauna in prominence if not in actual numbers, breeding on Isla Tassne (Pelican island), and periodically patrolling the whole of Bahia Kunkaak and El Infiernillo in lines and platoons of military regularity; gulls are always in sight, and the cormorant is common; while different ducks haunt several of the islets, and the shores are promenaded by curlews, snipes, and other waders. There is a corresponding wealth of plankton, which at low spring tide with offshore gale covers acres of shallow littoral with squirming or inert but always slimy life, the substratum for that of higher order; and jellyfish and echinoids are cast up by nearly every wave, while at night the surf rolls up the smooth strands in shimmering lines of phosphorescent light. On the whole, the aquatic life teems in tropic luxuriance and more than ordinary littoral variety; for the waters of the gulf are warmed by radiation and conduction from its sun-parched basin, while 136 the concentrated tides distribute and stimulate the species and keep the vital streams astir.

LOCAL FEATURES

Considered as a tribal habitat, Seriland comprises four subdivisions 133 of measurably distinct character, viz, (1) the broad desert bounding the territory on the east; (2) the mountainous zone of Sierra Seri; (3) 137 Tiburon island and the neighboring islets; and (4) the navigable straits and bays contiguous to island and mainland.

1. So far as its marginal portions are concerned, Desierto Encinas is a typical valley of the Sonoran province, sparsely dotted with vital colonies of the prevailing type and variegated by the exceptionally luxuriant mesquite forests of the Bacuache and Sonora fans; but the interior of the valley is rendered distinct by the fact that it lies near, if not below, the level of the sea.[1] The central feature is Playa Noriega—a film of brackish water for a few days after each considerable semiannual freshet, a sheet of saline mud for a few weeks later, and for the greater part of the year a salt-crusted sherd 20 square miles in area, level as a floor and unimpressionable as a brick pavement. The playa is rimmed by dunes 10 to 40 feet in height, and about these and along the arroyos which occasionally break into it there is some aggregation of salt-enduring shrubs, evidently sustained in part by the semiannual freshet with its meager vapors and fogs. Outside this rim the surface is exceptionally broken; low dunes and irregularly wandering banks of soft and dust-fine sand are interspersed with meandering salt flats much like the central playa, ranging from a few feet in width and a few yards in length up to mappable dimensions, as in the lesser playa lying east of the great one; and many of the dust-banks are honeycombed with squirrel burrows. This annulus of broken surface is narrow on the west, soon passing into okatilla scrub and then

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[1] The expedition of 1895, during which Seriland was surveyed, was not provided with apparatus [126] for accurate vertical measurement, and hence altitudes were only approximately determined. The determinations by Mr Johnson, who executed the topographic surveys, indicated that even the lowest part of the valley is somewhat above sea-level; but other facts indicate that it actually lies below the level of the waters of the gulf, and forms a miniature homologue of Colorado desert (in southern California): in the first place the central playa, which is undoubtedly flooded occasionally if not semiannually, does not embouch into, and has no channels extending toward, the sea; in the second place it is highly saline; again, the alluvial fans of Rio Bacuache and (especially) of Rio Sonora are so placed as to intercept and dam the trough occupied by Laguna la Cruz in its southern portion and Playa Noriega in its northern portion; concordantly, the detail configuration of the coast indicates marine transgression, apparently due to secular subsidence of the land—though the abundant marine shells of recent species toward the valley-bottom attest recent displacement of the sea. On the whole, the facts seem to indicate that, during recent geologic times, the lower portion of this valley was a shallow gulf extending northward (and probably also southward) from the eastern limit of Bahia Kino; that the importation and deposition of sediment, chiefly by Rio Sonora, outran the secular subsidence of the land so far as to displace the waters of the gulf in its central portion and to separate the northern arm from the sea; and that the waters of this northern arm were subsequently evaporated, disappearing finally in the central playa in which local inflow and evaporation are balanced by the usual mechanism of interior basins.

133 into the saguesa forests of the eastern base of Sierra Seri; on the east
it is miles in breadth, passing gradually into the normal Sonoran plain;
137 on the south it widens still farther, stretching all the way to Arenales
de Gil and Pozo Escalante, and merging into the playa-like mud-flats
bordering Laguna la Cruz, into which the gulf waters are sometimes
forced by southwesterly gales at high spring tides. Throughout this
portion of the desert, marine shells are scattered over the playa-like
flats or lodged in the adjacent banks, sometimes in great beds; the
vegetation is scantier than usual and largely of salt-loving habit; the
mud-flats are usually coated with saline and alkaline crusts, while the
dunes are soft and fluffy, and expand into broad belts perforated with
the tunnels of the surprisingly abundant rodents. Across this plain
131 of bitter sand-dust lie the two hard land routes to Seriland—the supposed
Escalante route of 1700, down the fan of Rio Bacuache and
thence by Barranca Salina; and the Encinas route, down the northern
border of the Rio Sonora fan and thence by Pozo Escalante to the
shores of Bahia Kino.[1]

000 Desierto Encinas is an impossible human habitat in any proper sense;
it is merely a broad and hardly passable boundary between habitats.
The hardy stock of the frontier ranchos, pasturing partly on the thorny
fruit of the cholla, push far out on the plains, and are sometimes watered
for short periods, under strong guards of heavily armed vaqueros, at
Barranca Salina; yet the greater part of the expanse is trodden only
by the Seri. Two or three ruined frames of Seri jacales and a few
361 graves crown the low knoll near Pozo Escalante, and there are one or
two house remnants near Barranca Salina; these are notable not only
as the easternmost remaining outposts of Seri occupancy, but because
they represent the only known instances in all Seriland of the erection
of even temporary houses adjacent to water. Distinct paths, trodden
[487] deep by bare Seri feet, radiate from both waters toward the Seriland
interior, but no traceable trails extend eastward.

133 The southern limit of Desierto Encinas is marked either by the broad
mud-flats opening into Laguna la Cruz or by the coast of the gulf, the
coast cutting the lower portions of the plain being accentuated by a
sand-bank 30 or 40 feet high, against which the surf thunders in nearly
continuous roar, audible halfway or all the way to Pozo Escalante. A
[487] Seri trail skirts the crest of this bank, sending occasional branches into

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[122] [1] Both the routes were traversed by the expedition of 1895, the former from the headwaters of Rio Bacuache to the upper portion of its alluvial fan, and then from the abandoned Rancho Libertad on the lower portion of the fan across Desierto Encinas by way of Barranca Salina. In the northern crossing a light vehicle (the first to traverse this portion of the desert), drawn by four horses and aided by several horsemen, was taken from Rancho Libertad across the northern portion of Playa Noriega and thence up Arroyo Mitchell to a point midway between Barranca Salina and Johnson peak, and was brought back over the same route. The Encinas trail from Rancho San Francisco de Costa Rica was traversed four times each way by the same outfit, and once each way by the running gear of a heavy wagon carrying the rude craft (about 1,000 pounds in weight) in which the Seri waters were navigated, this vehicle being drawn by 8 to 12 horses, frequently changed. Typical aspects of both routes are shown in plate III, the upper figure representing the Encinas trail and the lower a distant view of Sierra Seri, taken from Playa Noriega, in the depths of Desierto Encinas.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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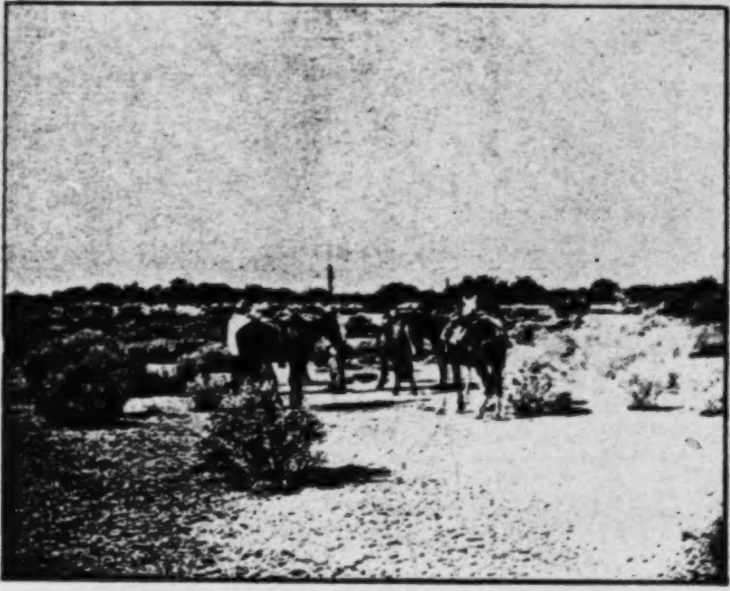
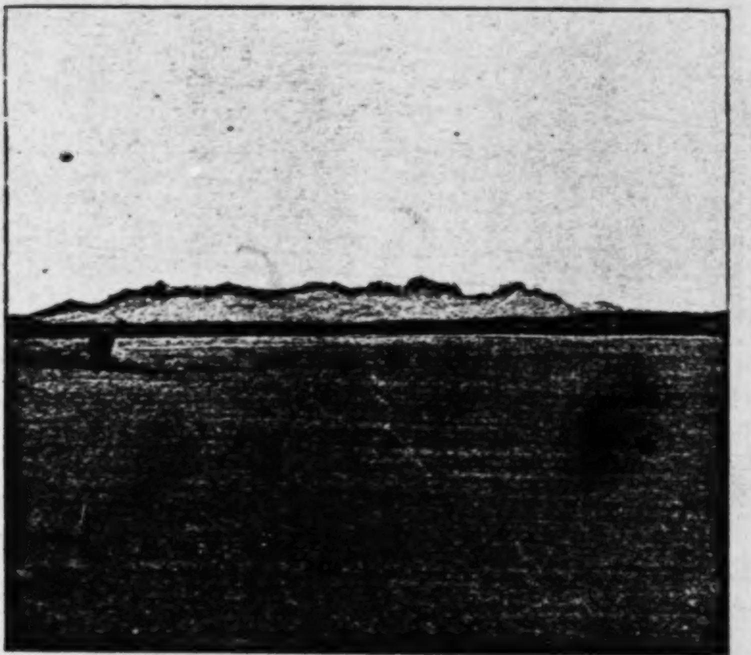


SERI FRONTIER



SIERRA SERI FROM ENCINAS DESERT

40 a

the interior. At Punta Antigualla the bank expands and rises into a [33
great mammillated shell-mound nearly 100 feet high, with several of
the cusps occupied by more or less ruined jacales; and occasionally occu- 487]
pied houses occur midway thence to the southernmost point of Sierra [364]
Seri, and again at the base of the first spur east of Punta Ygnacio.
Beyond Punta Antigualla the sweep of the waves is stronger than in
Bahia Kino, and the coastal sand-bank is generally higher. Between the
rocky buttresses of Punta Ygnacio and the next spur eastward the sand-
ridge rises fully 50 feet above mean low tide, and here, as elsewhere,
its verge is protected by a fog-fed chaparral thicket with occasional [137]
clumps of okatilla and other cacti. Behind the coast barrier lie lagoon-like basins, generally dry and floored with saline silt-beds, though sometimes occupied by briny pools formed through seepage during southwesterly gales; and there are physiographic indications that the northwestward extension of Laguna la Cruz formerly stretched some miles farther than now and lay in the rear of Punta Antigualla in such wise as to form a source of supply of the clam-shells of which the eminence is built.

2. Sierra Seri is a double range, divided mid-length by a broad saddle barely 2,000 feet in height.[1] Like other Sonoran ranges, the nucleal portions are exceedingly rugged and precipitous—at least two of its picachos shoot so boldly that they commonly seem to overhang, and have been called leaning peaks. In large part the precipices rise abruptly from a symmetrical dome molded by sheetflooding, much as the insulated buttes rise from the Bacuache fan in northeastern Seriland; so that the tract lying between Desierto Encinas and El Infiernillo is a composite of exceptionally precipitous and exceptionally
smooth mountain slopes. One of the Seri trails radiating from Bar- 487
ranca Salina lies across the mid-sierra saddle; others push into several
mountain valleys, and the largest leads to Tinaja Trinchera, at the base of Johnson peak, where there are a few low walls of loose-laid rubble, somewhat like those of the trincheras (entrenched mountains) farther eastward—the only structures of the sort seen in Seriland. Toward the southern end of the range lie various trails, the most con-
spicuous paralleling the coast, either near the shore or over the steep
salients, according to the configuration; while here and there ruinous [364]
jacales a few yards from the coast attest sporadic habitation. The
eastern shore of Bahia Kunkaak from Punta Ygnacio northward [133
reveals a typical geologic section of the Sonoran province: the transgressing waves have carved in the granitic subterrane a broad shelf lying just below mean low tide and usually stretching several furlongs offshore; this shelf is relieved here and there by remnantal crags of obdurate rocks, cumbered by bowlders and locally sheeted with sand and arkose derived from mechanically disintegrated granite; while the

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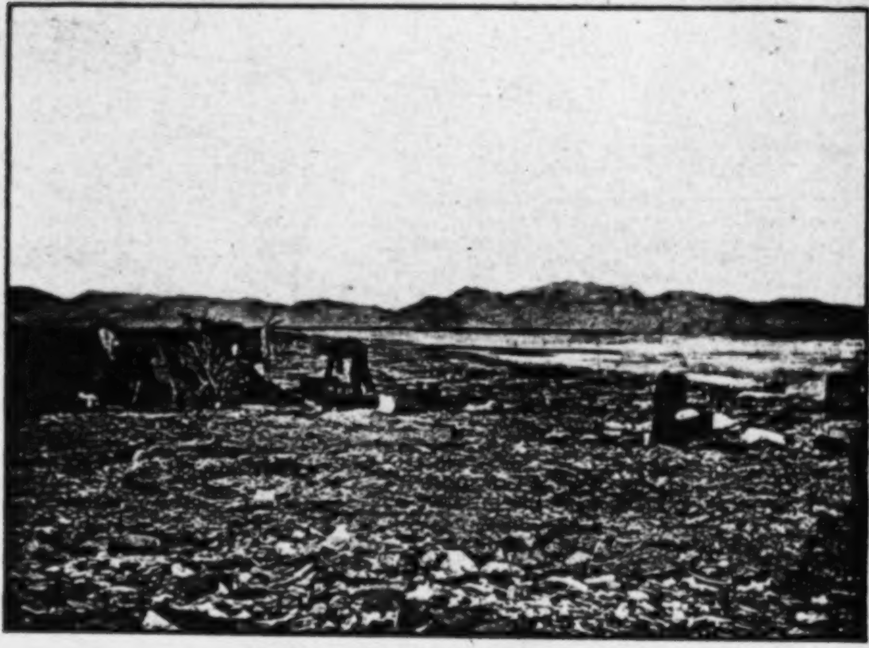
[1] The northern portion, as seen from the east, is shown in plate III; the southern portion, as seen from the west, appears in the upper part of plate IV, while the southwesternmost point is shown in the lower part of the same plate.

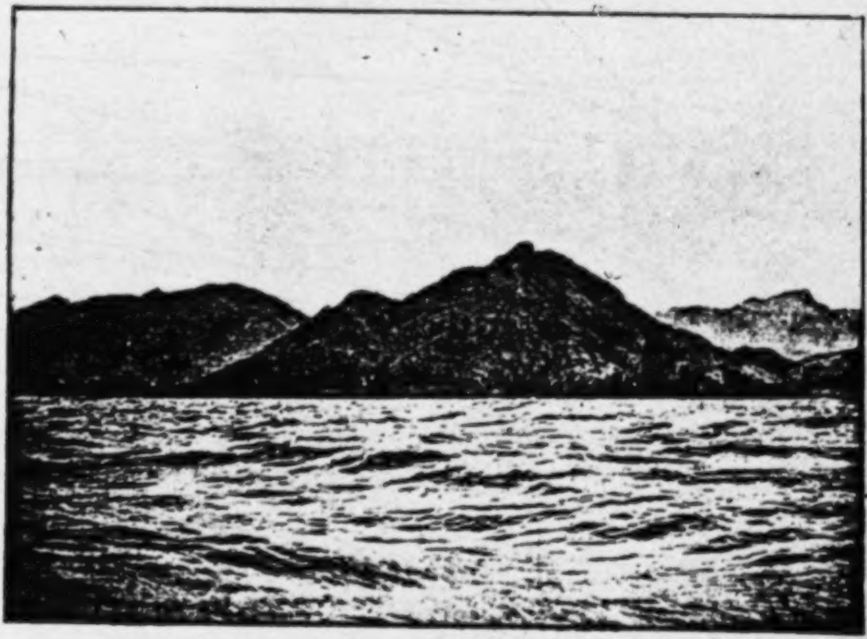
133 inner margin of the shelf is a sea-cliff, usually 30 to 50 feet high, of which the lower half is commonly granite and the upper half unconsolidated and recent-looking mechanical debris collected by sheetflood erosion. Sometimes the granite of the subterrane is replaced by volcanics; sometimes ancient and firmly cemented talus deposits separate the superficial mantle from the subterrane, as shown in the lower part of plate V; sometimes the line of sheetflood planation passes below tide-level, when the waves beat against the unconsolidated deposits in a deep embayment; sometimes the sharply defined planation surface ends abruptly at the sides of subranges or buttes shouting upward in the abrupt slopes characteristic of the sierra proper; yet this 10-mile stretch of coast is a nearly continuous revelation of the structure of sheetflood-carved plains and of modern marine transgression. The debris of the combined processes forms an abundant and varied assortment of bowlders, cobbles, and pebbles, whence the inhabitants readily derive their simple implements without need for studied forethought or manual cunning.

The long sand-spit terminating in Punta Miguel and the shorter one terminating in Punta Arena are the product of geologically recent wave building, and consist of irregular series of V-bars, backed by lagoon-like basins and enclosing considerable bodies of brine in the central portions; and the bars and basins become successively higher outward, in such wise as to attest the secular subsidence of this coast. [361] [487] Several jacales are located on the higher portion of the southern sand-spit, midway between Punta Granita and Punta Miguel, while footpaths traverse the flat and skirt the coast. Toward the terminal portion of the spit the sand is blown into hummocks, held by clumps of salt-enduring and sand-proof shrubbery; but there are no rancherias here, despite the fact that it is a natural point of embarkation—doubtless because no Seri structure could withstand the sand-drifting gales and storm inundations of this exposed spot. The more protected [136] lagoons behind the outer bars harbor abundant waterfowl, within bowshot of shrub-clumps and dunes well adapted to the concealment of hunters, while the mud-flats open to the tide abound in clams and other edible things. The features of the Punta Miguel sand-spit are repeated with variations along the eastern shore of El Infiernillo; and [361] Seri jacales, evidently designed for temporary occupancy, occur here and there, usually on higher banks above reach of the severer storms.

3. Tiburon island itself is apparently the chosen home of the Seri— [131] a habitat to which the mainland tract is at once a dependency, an alternative refuge, and a circumvallation. Its dominant range, Sierra Kunkaak, mates Sierra Seri in its essential features, though the rocks are for the greater part ordinarily obdurate eruptives rather than exceptionally obdurate granites, as in the mainland sierra; accordingly the range is somewhat lower and broader, while the sheetflood sculpture, with its sharp transition into precipitous cliffs, is somewhat less trench-



SIERRA SERI FROM TIBURON ISLAND



PUNTA YGNACIO, TIBURON BAY

42a

ant. Sierra Menor is a third term in the mountain series, in structure 133
and geomorphy as in altitude; while the interior plain is a homologue
of that portion of Desierto Encinas lying north of Playa Noriega—
i. e., of its (potentially) free-drained portion. Almost the entire perimeter
of Tiburon is suffering marine transgression, and is faced with
seacliffs overlooking wave-carved shelves; and in both form and structure
the greater part of the coast repeats, with minor variations, the
features of the mainland coast from Punta Ygnacio northward. Partly
because of the superior magnitude and height of its debris-yielding
sierra, partly because of protection from the wave-beat of the open
gulf, the eastern shore is skirted with a talus-shape slope, usually two
to four miles wide; and while there are unmistakable evidences of
sheetflood carving in the higher portions of this plane, the coastal cliff
commonly reveals nothing but heterogeneous debris, sometimes rising
thirty or forty feet above tide. Somewhat the greater part of the volume
of this debris is fine—i. e., sand and silt and nondescript rock- 133
matter; but there is always a considerable element of larger rock- 135
fragments, which gather along the shore in a pavement of bowlders
and cobbles (upper figure of plate v). These coarse materials—important
factors in aboriginal industry—are harmoniously distributed; more
conspicuously on the ground than on the map, the coast is set with
salients (of which Punta Narragansett is a type), consisting merely of
exceptional accumulations of debris from gorges in the sierra and from
shallow arroyos, or pebble washes, traversing the coastwise plain. These
salients owe their prominence partly to the relative coarseness, partly
to the abundant supply, of fragmental material from the heights; and
about their extremities the beach is paved with bowlders, which grade
to cobbles or even to pebbles along the reentrant shores on either
hand. This distribution of cobbles is one of the conditions governing
the placement of Seri rancherias; and in many cases the jacales are [361]
located, either singly or in groups, where the coastal salients and
reentrants meet, and where there is an abundant supply of cobbles of
convenient size and wave-tested hardness.

The coastwise plain skirting eastern Tiburon has a few wave-built 133
projections analogous to those east of El Infiernillo; the most conspicuous
of these are Punta Tormenta, Punta Tortuga, and Punta
Perla with its tide-swept extensions, Bajios de Ugarte. All of these
are located primarily by sierra-fed arroyos, but all are greatly extended
by wave-borne material laid down along lines determined by the prevailing
currents of this best-protected portion of the coast. The long
outer face of Punta Tormenta, shaped by the storms of Bahia Kunkaak,
is strikingly regular and symmetric; its broad extremity and
inner face are diversified by subordinate bars and lagoons, evidently
tending to connect with the main coast toward Punta Tortuga, and
thereby to transform the whole of Rada Ballena into a lagoon.
Already the narrow embayment is so shallow that, although a com-

133 fortable haven at high tide, it is mostly mud-flat and sand-waste at
extreme low tide—a condition which explains the stranding of an
80-foot whale in this treacherous harbor about 1887. The rada is
between two and three miles in length. It abounds in marine life of
136 kinds preferring quieter waters: clams are plentiful in its mud-flats,
a sponge lines portions of the bottom toward its inner extremity,
oysters cluster numerously on bowlders and on the mangrove-like roots
and trunks of a large shrub along the outer shore, and various fishes
find refuge here from the fierce currents and the hungry sharks and
porpoises of the open strait; these and other creatures form food for
innumerable waders and other water-fowl that seek shelter in the quiet
bay, which is still further protected by salt-enduring shrubbery on the
bars of the point and by the shrubby thickets and wave-cast banks
and wind-built dunes on the mainland side.

The combination of conditions renders this portion of the Tiburon
361 coast the optimum habitat of the Seri Indians. There are, indeed, no
houses or other traces of permanent habitation on Punta Tormenta itself,
which is not only swept by gales but must sometimes be inundated by
gale-driven waters at high spring tide; but at the inner end of the
long sand-spit, and also on the mainland opposite the outer portion of
Rada Ballena, there are extensive and well-kept rancherias, capacious
enough to accommodate comfortably thirty or forty Seri families, i. e.,
150 or 200 persons. Toward its landward end the sand-spit is built
311 largely of pebbles and cobbles, of which thousands of tons are adapted
to industrial use; sea-food is practically unlimited and is readily taken;
water-fowl literally crowd the protected rada within arrow-shot of
natural cover; the outer slope of the bar is admirably suited for
landing and embarking balsas in calm weather, while the bay is an
ideal harbor for the portable craft, and the shrub-grown shores give
unlimited opportunity for concealing them when not in use; the dunes
and banks are high enough to protect the low jacales from stormwinds,
while the abundant sponges and turtle-shells afford material for
thatching and shingling the more exposed walls and roofs; and finally,
[312] it is but a favorite distance (about 4 miles) to the permanent fresh
water of Tinaja Anita. From this Seri metropolis well-trod trails
487 radiate toward all other parts of the island; the best beaten leads to
the tinaja, sending branches into all the neighboring gorges, in which
game is sometimes taken; next best-worn is the trail laid across Sierra
Kunkaak to strike Arroyo Carrizal mid-length of its permanently wet
portion; others pass northward to rancherias at different points on
the coast, and still another skirts the coast southward by several
smaller rancherias to the considerable jacal collection near Punta Narragansett—this,
like other longshore routes, having alternative trails,
the evanescent fair-weather one following the beach, while the permanent
path threads the thorn-set thickets marking the crest of the seacliff
or cuts across the longer salients. The Narragansett rancheria is

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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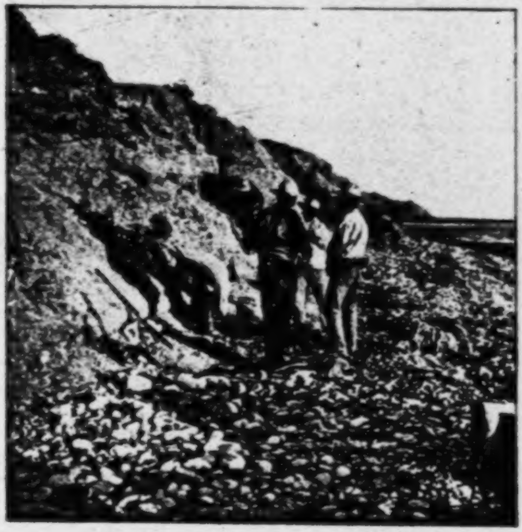
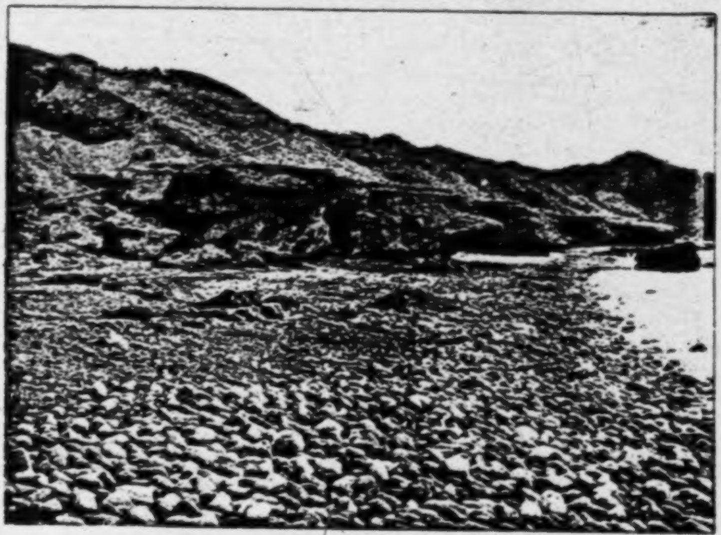


WESTERN SHORE OF TIBURON BAY



EASTERN SHORE OF TIBURON BAY

[p.44a]

also a center for radiating trails, the best-beaten of these leading toward the fresh waters of Tinaja Anita and Arroyo Carrizal; and even the rancherias half-way thence to Punta Mashém send their most permanent paths over 15 miles of intervening ranges and spall-strewn valleys toward the same waters. According to Mashém's cautious statements, there is a minor Seri metropolis at the northwestern spur of Sierra Kunkaak, within reach of Pozo Hardy and Arroyo Agua Dulce, and two or three smaller rancherias along the western shore; but these were not reached by the 1895 expedition. 487 [361]

4. The seas washing Seriland are notably troubled by tides and winds. Gaping toward the Pacific, and narrowing and shoaling for the 800 miles of its length (measured from midway between Islas de Tres Marias and Cabo San Lucas), Gulf of California approaches Bay of Fundy, Bristol channel, and Broad sound as a tide accumulator; while the semidiurnal sweep of the waters in the upper half of the gulf is conditioned by the constriction of the basin to a fraction of its average cross-section at the narrows between Isla Tiburon and Punta San Francisquito. Toward the head of the gulf the ordinary spring tides range from 20 to 25 feet, and may be much increased by favoring winds; the debacles culminate there, but the currents culminate off Seriland in the great tide-gate half dammed by the islands of Tiburon, San Esteban, San Lorenzo, and Salsipuedes,[1] with their marine buttresses, and through the breaches of Pasaje Ullou, Estrecho Alarcon, and Canal de Salsipuedes flow, four times daily, some two or three cubic miles of water in tremendous tidal floods, probably unsurpassed in vigor elsewhere on the globe. Naturally the islands and the adjacent coasts afford extraordinary examples of marine transgression; and while exceptional wave-work is a factor, the transgression is undoubtedly due mainly to the extraordinary tidal currents in this gateway of the gulf. The fierce currents and the frequent storms of the region condition local navigation, and have undoubtedly contributed to the development of the peculiarly light, strong, and serviceable water-craft of the aboriginal navigators among the islands. 133

El Infiernillo derives its distinctive characteristics largely from the local character of the tides. Bahia Kunkaak is a funnel-shape embayment so placed as to catch half the volume of the incoming tide and to

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[1] Originally the name Islas Sal-si-puedes (Get-out-if-canst) was applied to the various islands of this gateway of the gulf, including San Lorenzo, San Esteban, and San Agustin (now Tiburon), together with the smaller islets, as shown in the map of Padre Fernando Consag (in Noticia de la California y de su Conquista, etc., por el Padre Miguel Venegas, 1757, tomo III, p. 194); and Padre Consag's account of the currents encountered in 1746 explains the designation: "The great sea which runs here even in fair weather would not allow us to stay, and it was with great difficulty we took in a little water. We now attempted to weather the Cape of San Gabriel de Sal-si-puedes, so greatly dreaded by seamen on account of these islands, several contiguous points of land and many ledges of sunken rocks extending a great way from the land. Here the sea is so agitated by the current that a gale or a calm makes but little difference" (English translation of Venegas' Noticia, titled A Natural and Civil History of California, 1759, vol. II, pp. 312-313). Hittell speaks of "the group of islands known as Salsipuedes, the largest of which is now called Tiburon" (History of California, 1885, vol. I, p. 225). Dewey restricted the name to a single small island near the Baja California coast. Further references to the islands and their designations are noted postea, p. 65. 103 114

133 concentrate the flow into a bore hurtling through Boca Infierno and thence throughout the shoaling strait with greatly accelerated velocity; meantime the body of the tidal stream is diverted around Tiburon, and then enfeebled in its northward flow by the expansion of the gulf above the Tiburon-San Francisquito gateway, so that the entire strait is flooded (to the limit fixed by the capacity of Boca Infierno) before the main tide flows into its head past Isla Patos and through Bahia Tepopa; and with this unobstructed inflow the strait is reflooded with a counterbore, whereby the waters are heaped and pounded into an unstable, swirling, churning mass.[1] The flooding is little less than catastrophic in magnitude and suddenness; indeed, the volume of water in the body of the strait between Punta Perla and Boca Infierno

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[114] [1] Unquestionably the clearest view of El Infiernillo ever enjoyed by Caucasian eyes was that of Messrs Johnson and Mitchell from the culminating point of Sierra Seri (Johnson peak), which they occupied for about twenty-three hours on December 7 and 8, 1895. Mr Johnson's notes on the appearance of the strait are as follows: "On the occasion of the ascent of Sierra Seri, which rises from the coast, shutting off the view of Isla Tiburon from the desert on the east, I received a striking impression of the elaborate and beautifully symmetrical plan of the long swirling currents of El Infiernillo. The climb had been made from the east direct to the summit peak, so that the first sight of both island and gulf was not only from close at hand, but from an elevation of about a mile. The crest of the ridge was reached at the instant of sunset, and the spectacle of the innumerable current-markings was brief. Our position was nearly opposite the northern end of the strait; and its elevation was so great that the opposite mainland and island shorelines were seen in map effect rather than in perspective. The entire strait, to its northern end at Punta Perla, was in the shadow of the island; and the current design was revealed only in the shadow. At the shadow-margin extending from the northern tip of the island the lines were sharply cut off; and beyond, along the westward bend of waters forming Bahia Tepopa and opening into the gulf in full sunlight, there was no suggestion of them. Within the shadow the effect was that of a film of oil on a water-surface which had been stirred and allowed to come to rest—though the regularity of the lines was as though the stirring had been orderly. Not the slightest motion was perceptible from the peak during the minute or two that the spectacle lasted before the sun disappeared and twilight fell, though the suggestion from configuration alone was that of violent swirling. The general movement was evidently southward toward Boca Infierno, and the swirls were apparently the result of frictional resistance along both shores; the system of curving lines as a whole was very much that which would be presented by a broad feather thrust into a bottle. There were central lines in great number, somewhat sinuous though never crossing, diverging one by one toward the shores on either hand, where they curved backward with complex interferences in large reversing arcs and many minute circlings. The straightening out of the curves in perspective was quite perceptible toward Boca Infierno, and beyond it was pronounced. The air appeared to be still, so that the current pattern was not at all obscured by waves; and the spectacle of the broad strait, appearing almost beneath me, limned with a crowded design of sweeping fine lines, the delicate clearness of which recalled a steel engraving, was peculiarly impressive. That we had been fortunate in the moment of reaching the summit was apparent next day. The spectacle was, indeed, repeated at sunrise and for a short period thereafter, though the general design was markedly different, and less intricacy of pattern was discernible, while the general effect was comparatively vague; perhaps the shadow of Sierra Seri was too heavy, or, more probably (so was my impression at the time), our position was not favorable for that direction of illumination. In full light during the day up to the hour of our departure in late afternoon, no hint or vestige of the current design remained. It was evident that the lines were brought out with especial clearness by the favorable illumination and comparative stillness of air; and it was particularly evident that the lines marked movements in the water, even if there were corresponding air-currents, since they harmonized perfectly with the configuration of the shores and with the trend of spits and bars and offshore markings seen through the shallow waters, especially toward the northern end of the strait. The accord between shore curves and the current lines seen in the evening indicated a southward motion much more vigorous than the reverse movement witnessed next morning; for the marked variation in the design noted in the morning was of a character strongly suggesting a reversed movement of the water, while the faintness of the markings then may perhaps have been due to comparative feebleness of current rather than to unfavorable lighting. Certainly the close agreement between the elaborate system of markings, so clearly revealed in the evening, and the prevailing curves of the shores would seem to indicate unmistakably that, whatever the direction and strength of flow, the markings were a product of current motion."

is approximately doubled at neap tide and tripled at spring tide twice in each twenty-four hours. Then, as the crest of the main debacle 133 advances into the upper gulf beyond Punta Tepopa, the trough of the ebb is already approaching the Tiburon-San Francisquito constriction; and even before the final flooding of El Infernillo from the north is completed, the waters of Bahia Kunkaak are receding and a tiderip is tearing through Boca Infierno at a rate sufficient to half empty the reservoir of its accumulated volume before the ebb trough has rounded the island to the head of the strait. Thus the effect of the exceptional tides of the gulf and the peculiar configuration of Seriland is to concentrate and accentuate tidal currents in El Infernillo, and to convert the channel into a raceway for nearly continuous tide rips. According to Dewey, the spring tides are 10 feet and the neaps 7 feet about the northern end of the strait;[1] in December, 1895, the tides about Punta Blanca and Punta Granita were roughly determined as 13 or 14 feet at spring and 7 or 8 at neap, the range varying considerably with the direction and force of the wind; and the consequent current through Boca Infierno was estimated at 4 to 8 miles per hour, the higher velocity of course coinciding with the spring tide. The change in direction of the current is almost instantaneous—indeed, the run is in opposite directions on opposite sides of the narrow strait when the wind sets obliquely—so that the tidal flow is practically continuous. The currents are of course slacker in the body of the strait, but even here suffice to transport coarse sediments; and it is to this agency that the "shoals and sand spits" noted by Dewey[2] and the maintenance of a deep channel through Boca Infierno are chiefly to be ascribed. The materials of Punta Tormenta and Punta Tortuga attest the transportation of pebbles up to 3 or 4 inches in diameter by the combined work of waves and tidal currents.

Like other mountain-bound water bodies, the portion of the gulf washing Seriland is exceptionally disturbed by winds of given velocity 132 by reason of the high angle of incidence; and moreover the exceptionally 133 prominent local configuration disturbs the atmospheric currents in a manner somewhat analogous to that in which the tidal currents are disturbed; so that the winds are highly variable but generally strong. Under the combined action of tide and wind the waters are normally ruffled; choppy seas freely flecked with whitecaps are rather the rule than the exception,[3] and are replaced less frequently by calms than by steadier billows breaking in continuous surf on sand-beaches (figure 5) and dashing into foam-flecked and rainbow-tinted spray-jets, bathing the rocky cliffs for 50 feet above their bases. Sometimes the wind stills suddenly, when the sea sinks to rythmic swells, soon extinguished by reaction from the irregular shores and by the interference of tide-currents; but the swell seldom dies away before the gale springs again.

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[1] Publication No. 56, U. S. Hydrographic Office, Bureau of Navigation, 1880, p. 142.

[2] Op. cit., p. 143.

[3] A stiller and navigable condition of the sea is shown in the view of Punta Ygnacio, plate IV.

The broad valley between Sierras Seri and Kunkaak, bottomed by El 132 Infiernillo, is especially beset by fierce and capricious gales; the general atmospheric drift is disturbed by the leading and lesser sierras, as well as by temperature convection from the gulf, and eddies are developed in such wise as to send air-currents directly or obliquely up or down the valley. These local or sublocal winds are characteristic. Judging from observations covering several weeks, the valley is wind-swept longitudinally for an average of eighteen or twenty hours daily, the winds ranging from strong breezes to gales so stiff as to load the air with sand ashore and spray asea; and even the calms may be broken any minute by sudden gusts and williwaws, passing rapidly as they arrive. Not only waves but wind itself combines with tides to shape the [134] structural features of the valley; nowhere within it do flour-fine sands like those of Desierto Encinas occur, save as a hardly perceptible constituent of the dunes and banks of coarser sand—they have been blown into the sea or beyond the limits of the valley. Throughout the strait 132 133 so expressively named by its explorers, the capriciousness of the sea culminates, despite the shoalness and the protection from easterly and westerly winds; the storm currents and tide-currents are half the time opposed, raising breakers even when the air is nearly still; eddies and whirls and cross-currents arise constantly, and even at the stillest

[122]

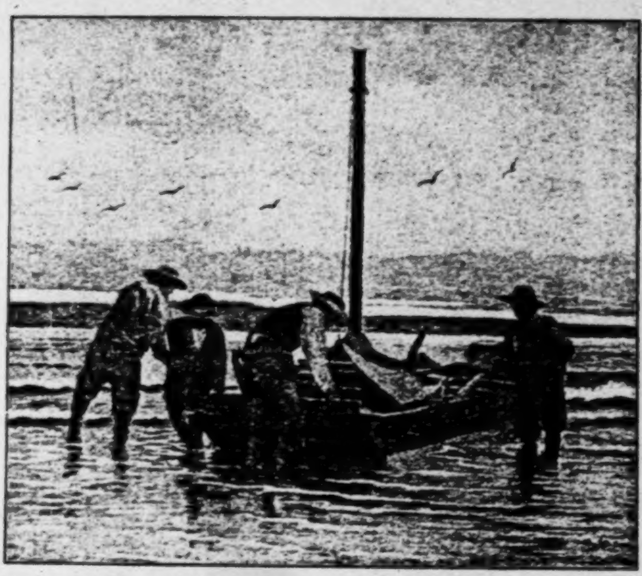

FIG. 5—Embarking on Bahia Kunkaak in la lancha Anita.

hours tumultuous waves come and go sporadically, while about the mile- 132
wide boca the choppy sea sometimes takes the form of spire-like jets, 133
spurting 5 or 10 feet high and breaking into aigrettes of glittering
spray in most unwaterlike and wholly indescribable fashion. Dewey
described the strait as "unsafe for navigation by any except the small-
est class of vessels"; it is safe, indeed, only for portable and inde-
structible craft like the Seri balsas, which may be put off or carried [501]
ashore at will by craftsmen willing to wait for wind and tide, and unpos-
sessed of impediments of a sort to be injured by wetting. Of such an
environment the balsa is a natural product.

The adjunct islets of Seriland are miniatures of Tiburon in all essen- 133
tial respects, save that they are without fresh water. The largest is
San Esteban, a somewhat complex butte rising sharply from the waters 136
in a nearly continuous sea-cliff recording vigorous work by storms
and tides; it is occasionally visited by the Seri, chiefly in search of [222]
water-fowl and eggs. The most important of the series in Seri
economy and mythology is Isla Tassne, off the mouth of Bahia
Kino; it is a rugged butte some 600 feet high, rising in wave-cut
cliffs on the sea side and pedimented by low spits and banks of sand
toward the lea; the sand-banks are literally flocked with pelicans,
while other fowl cover the flatter ledges and crowd the crannies of the
pinnacle. Isla Turner is a somewhat smaller and still more rugged
butte, bounded on both sides by precipitous cliffs, while Roca Foca is
merely a great rock shelving upward from the storm-swept waters off
the most exposed angle of Tiburon; in the crannies of the former
birds nest abundantly, while the lower ledges of both are haunted by
seals. Isla Patos, north of Tiburon, is a breeding-place for different
water-fowl, and is especially noted as a refuge for ducks; it, too, is for
the most part a rocky butte, with a sandy shelf at the eastern base.
Beyond San Esteban lies the similar but smaller Isla San Lorenzo,
while Isla Salsipuedes and a few other islets stretch thence northward
half way to the southern point of Isla Angel de la Guarda, the second-
largest island of the gulf. San Lorenzo and the smaller islets are 224
occasionally visited by the Seri, partly for a mineral pigment used in
face-painting, partly in quest of game; and they sometimes push on to [135]
the larger island to enjoy its fairly abundant game, including the
easily taken iguana, amid the ruins of an ancient culture apparently [172]
akin to that of southern Mexico. Even the most frequented islets,
Tassne and Patos, can be reached only by crossing miles of open sea; 502
but in their way the Seri are as canny navigators as they are skilful
boat-builders—it is their habit to hug the shore in threatening weather,
to await wind and tide for hours or days together, to set out on
distant journeys only when all conditions favor, and in emergency to
seize inspiration from the storm like the vikings of old, and bend
supernormal power to the control of their craft.

Summarily, the prevailing features of Seriland may be said to be 13

13 characterized by extreme development or intensity, many of them being of such sort as to be adequately described only by the aid of strong comparatives or superlatives. Seriland is the most rugged portion of piedmont Sonora, and is bounded by its most forbidding desert; the territory is nearly if not quite the most arid and inhospitable of the Sonoran province; the diurnal and sporadic temperature-ranges are apparently the widest, and the gales and other storms apparently the severest of the entire province; the flora is among the most meager and least fruitful, and the mountains are among the craggiest of the continent; the tides are among the strongest and the tidal currents among the swiftest of the world; and, as shown by the limited direct observations and by the extraordinary marine transgression, the waters are among the most turbulent known. At the same time, the waters washing Seriland are among the richest of America in sea-food, so that the habitat is one of the easiest known for a simple life depending directly on the product of the sea. It is but natural that these extreme factors of environment should be measurably reflected in pronounced characteristics on the part of the inhabitants.

SUMMARY HISTORY

There is some doubt as to who was the first among the Caucasian explorers of the Western Hemisphere to set eyes on the Seri Indians. 175 Nuño de Guzman, rival of Cortés and invader of Jalisco and Sinaloa, must have appoached the southern boundary of Seri territory about 1530, though there is no record of contact with these tribesmen. Diego Hurtado de Mendoza, one of Cortés' captains, coasted along southern Sonora in 1532 to a point considerably beyond Rio Yaqui, where he was massacred on his return, and hence left no record of more northerly natives.[1] Both of these pioneers must accordingly be eliminated from the list of probable discoverers of the Seri.

In the course of their marvelous transcontinental journey, Alvar Nuñez Cabeza de Vaca and his companions also approached Seriland, and apparently skirted its borders shortly before meeting Captain Diego de Alcaraz, of Guzman's party; this was in April, 1536, according to Bandelier.[2] Vaca wrote: "On the coast is no maize: the inhabitants eat the powder of rush and of straw, and fish that is caught in the sea from rafts, not having canoes. With grass and straw the women cover their nudity. They are a timid and dejected people."[3] He added half a dozen ambiguous sentences, of which only a part, apparently, refer to the "timid and dejected people"; half of these describe a poison used by them "so deadly that if the leaves be bruised and steeped in some neighboring water, the deer and other animals drinking it soon burst". The people were identified as Seri (Ceris) by Buckingham Smith and General Stone,[4] and the identification may be considered as strongly probable, provided the Tepoka be classed with the Seri. [114]

The next Caucasians to approach Seriland appear to have been the two Spanish monks, Fray Pedro Nadal and Fray Juan de la Asuncion, who, in 1538, sought to retrace Vaca's route, and traveled northward to a river somewhat doubtfully identified as the Gila;[5] but the meager accounts of this journey contain no clear reference to the Seri Indians.

On March 7-19, 1539, the Italian friar Marcos de Niza left San Miguel de Culiacan under instructions from the Viceroy, Don Antonio

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[1] Theodore H. Hittell, History of California, 1885, vol. I, pp. 43-44.

[2] Contributions to the History of the Southwestern Portion of the United States (Hemenway Southwestern Archæological Expedition), Papers of the Archæological Institute of America, American series, V, 1890, p. 44. 113

[3] Relation of Alvar Nuñez Cabeça de Vaca, translated from the Spanish by Buckingham Smith; New York, 1871, p. 172.

[4] Ibid, p. 174.

[5] Cf. Bandelier, Magazine of Western History, IV, 1886, p. [illegible].

*175 de Mendoza, to explore the territory traversed by Vaca, under the guidance of the negro Estevanico, the only one of Vaca's three companions remaining in Mexico; in good time he reached a point probably not far from the center of the present state of Sonora, whence messengers were sent coastward to return duly accompanied by certain "very poor" Indians wearing pearl-oyster (?) ornaments, who were reputed to inhabit a large island (almost certainly Tiburon) reached from the mainland by means of balsas. Bandelier identified these coastwise
114 Indians with the Guayma tribe, a supposed branch of the Seri;[1] but if the "large island" were Tiburon, it would seem more probable that
*175 the Indians belonged to the tribe now known as Seri, while both description and location suggest the Tepoka. This record is of questionable weight, partly by reason of the doubtful identification of the Indians, and partly because the friar's itinerary was found to be misleading by his immediate successors, because of the fact that portions of his narrative were based on hearsay; though it is just to note that Bandelier, after critical study, deemed the record about as trustworthy as others of the time, and to add that the disparagement of Niza's discoveries by his followers was in accord with the fashion of the day—indeed it was little more severe relatively than the criticism of the strikingly trustworthy Ulloa by his first follower, Alarcon.

On July 8–19, 1539, according to the collection of Ramusio, three
*175 vessels sent out by Cortés to discover unknown lands—"Of Which Fleete was Captaine the right worshipfull knight Francis de Vlloa borne in the Citie of Merida"—sailed from Acapulco.[2] Skirting the mainland northwestward, they explored Mar de Cortés, or Gulf of California; and on September 24 (as fixed by interpolation from Ulloa's excellent itinerary) they descried and described the features of the coast in such fashion as to locate their vessels (one was already lost) off the southern point of Tiburon, and in sight of the islands of San Esteban and San Lorenzo, as well as locally prominent points on the mainland of Lower California. Here they "discerned the countrey to be plaine, and certaine mountaines, and it seemed that a certaine gut of water like a brooke ran through the plaine" (p. 322). Judging from other geographic details, this "gut of water" was certainly the tide-torn gateway now named Boca Infierno; while the next day's sailing (it is noteworthy that this was "north" instead of northwestward as usual) carried them by "a circuit or bay of 6 leagues into the land with many coues or creeks", evidently Bahia Tepopa with the northern end of the turbulent strait El Infiernillo. The record shows clearly that Ulloa discovered Tiburon, but failed (quite naturally, in view of the route pursued and the peculiar configuration at both extremities of the strait) to perceive its insular character. No mention is made of inhabitants or habitations on this land-mass, though both are described on the

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[113]
[1] Ibid., pp. 661–663; Papers of the Archæological Institute of America, American series, v, p. 118.
[2] The Voyages of the English Nation to America, collected by Richard Hakluyt and edited by Edmund Goldsmid, 1889, vol. III, p. 317.

neighboring island of Angel de la Guarda in terms that would be applicable to the Seri. 175

On Monday, February 23, 1540, according to Winship,[1] Captain-General Francisco Vazquez Coronado set out on his ambitious and memorable expedition to the Seven Cities of Cibola. His course lay from Compostela along the coast of Culiacan, and thence northward through what is now Sinaloa and Sonora. On May 9-20, 1540, Hernando de Alarcon set sail on the ancillary expedition by sea; he followed the coast from Acapulco to Colorado river, and although he undoubtedly saw and was the first to name Tiburon,[2] and claimed to have "discouered other very good hauens for the ships whereof Captaine Francis de Vlua was General, for the Marquesse de Valle neither sawe nor found them",[3] he made no specific record of any of the features of Seriland or of contact with the Seri Indians. Meantime Coronado's forces were divided, a considerable part of the army falling behind the leader; and some time during the early summer the belated army, under Don Tristan de Arellano, founded the town of San Hieronimo de los Corazones, which in the following year (1541) was transferred to a place in Señora (Sonora) not now identifiable. From Corazones Don Rodrigo Maldonado went down to the seacoast to seek the ships, and brought back with him "an Indian so large and tall that the best man in the army reached only to his chest", with reports of still taller Indians along the coast.[4] It is impossible to locate Maldonado's route with close accuracy, but in view of geographic and other conditions it is evident (as recently shown by Hodge[5]) that he must have descended Rio Sonora and approached or reached the coast over the broad delta-plain of that stream south of Sierra Seri, and thus within Seri territory. The reported gigantic stature practically identifies the Indians visited by him with the Seri, since no other gigantic tribes were consistently reported by explorers of western North America, and since the 6-foot Seri warriors, with their frequent Sauls of greater stature, are in fact gigantic in comparison with the average Spanish soldiery of earlier centuries. There are indications that the fame of these giants of the Southern sea spread to Europe and filtered slowly throughout the intellectual world, and that the fancy-clothed colossi grew with their travels, after the manner of their kind—indeed, there is no slender reason for opining that these half-mythical islanders were the real originals of Jonathan Swift's Brobdingnagians,[6] despite his location of their fabled land a

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[1] The Coronado Expedition, 1540-1542, Fourteenth Annual Report of the Bureau of Ethnology, 1896, p. 382.

[2] As a harbor or anchorage marked "del Tiburon" on the map of "Domingo del Castillo, Piloto", drawn in 1541, and reproduced in Historia de Nueva-España, escrita por su esclarecido Conquistador Hernan Cortés, aumentada con otros documentos, y notas, por el Ilustrisimo Señor Don Francisco Antonio Lorenzana, Arzobispo de Mexico: Mexico, 1770, p. 328.

[3] The Voyages of the English Nation to America, vol. IV, p. 6.

[4] Winship, op. cit., p. 484.

[5] Coronado's March to Quivira, in J. V. Brower, Harahey (Memoirs of Explorations in the Basin of the Mississippi, vol. II), 1899, p. 35.

[6] Cf. The History of Oregon, California, and the other Territories on the Northwest Coast of North America, by Robert Greenhow, 1845, p. 67; History of California, by Theodore H. Hittell, 1885, vol. I, p. 149.

+175 few degrees farther northward on the long-mysterious coast below the elusive "Straits of Anian".

About the middle of September, 1540, Captain Melchior Diaz, then in command at Corazones, selected 25 men from the force remaining at that point, and set out for the coast on what must have been one of the most remarkable, as it is one of the least-known, expeditions in the history of Spanish exploration; for he traversed either the streamless coast or the hardly more hospitable interior through one of the most utterly desert regions in North America, from the lower reaches of Rio Sonora to the mouth of the Colorado. The record of this journey is meager, ambiguous, and apparently inconsecutive; it indicates that he encountered the Indian giants seen by Maldonado, but confused them with the Indians of the Lower Colorado. On the return journey Diaz lost his life through an accident, and his party reached Corazones on January 18, 1541, after encountering hostility from Indians not far from that settlement. Word was sent to Coronado, then in winter quarters on the Rio Grande, who dispatched Don Pedro de Tovar to the settlement for the purpose of punishing the hostile natives; he, in turn, sent Diego de Alcaraz with a force to seize the "chiefs and lords of a village". This Alcaraz did, but soon liberated his prisoners for a petty exchange. "Finding themselves free, they renewed the war and attacked them, and as they were strong and had poison, they killed several Spaniards and wounded others so that they died on the way back. . . . They got back to the town, leaving 17 soldiers dead from the poison. They would die in agony from only a small wound, the bodies breaking out with an insupportable pestilential stink."[1] [114]

The Coronado expedition had still further experience with (evidently) the same Indians; for as the army approached Corazones on the return a soldier was wounded, and was successfully treated, according to the record, with the juice of the quince. "The poison, however, had left its mark upon him. The skin rotted and fell off until it left the bones and sinews bare, with a horrible smell. The wound was in the wrist, and the poison had reached as far as the shoulder when he was cured. The skin on all this fell off."[2]

There is some question as to the identity of the Indians met by Diaz's men, Alcaraz and his force, and the Coronado army near Corazones; but various indications point toward the Seri. In the first place, the several Indian settlements mentioned in the records define what must have been then, as it was two centuries later, the Seri frontier, beyond which lay the "despoblado" of Villa-Señor, i. e., the immense area hunted and harried by roving bands from Tiburon; so that the Seri must frequently have crossed the paths pursued by the Spanish pioneers. In the second place, the accounts themselves seem to be typical records of contact with Seri Indians, which might be repeated for each subsequent episode in their history or century in time. The description of the effect of the poison is especially suggestive of the Seri; as pointed out on a later page, the Seri arrow-venom is magical in motive, but actually consists of decomposing and ptomaine-filled organic matter, so that it is sometimes septic in fact, while the arrow-poison of the neighboring Opata, Jova, and other Piman tribes was (so far as can be ascertained) vegetal; and these accounts seem to attest septic poisoning rather than the effects of any known vegetal toxic.[1] 175x [171] [178]

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[1] Winship, op. cit., p. 501.

[2] Ibid., p. 538.

Such (assuming the validity of the several identifications) are the earliest records concerning the truculent tribesmen and the desolate district known centuries later as the Seri and Seriland.

About 1545 began the Dark Ages in the history of northwestern Mexico; the excursion of Guzman, and the journeys of Cabeza de Vaca and Friar Marcos and of Coronado himself, died out of the memory of the solitary adventurers and scattering settlers who slowly infused Spanish culture and a strain of Caucasian blood into the Sonoran province; even the route taken by Coronado's imposing cavalcade was lost for centuries, to be retraced only during the present generation, largely through the determinations of Simpson, Bandelier, Winship, and Hodge.[2] It is true that Don Francisco de Ibarra penetrated the territory in 1563, and remained until rumors of gold in other districts drew him elsewhere; it is also true that Captain Diego Martinez de Hurdaide pushed into the province in 1584, and entered on a career of subjugation, waging persistent war with the Yaqui, which resulted in the acquisition of the territory of Sonora by treaty April 15, 1610;[3] yet few records of exploration or settlement were written before the advent of the Jesuit missionaries, toward the end of the seventeenth century. [114]

Still more astounding was the eclipse of knowledge of the gulf. Despite Ulloa's survey of the entire coast, recorded in an itinerary so detailed that every day's sailing may readily be retraced, and despite Alarcon's repetition of the surveys and extension of the discoveries far up Rio Colorado (where his work was verified by that of Melchior Diaz), a mythic cartography arose to shadow knowledge and delude exploration for a century and a half; for "upon the authority of a Spanish chart, found accidently by the Dutch, and of the authenticity of which there never were, or indeed could be, any proofs obtained, an opinion prevailed that California was an island, and the contrary assertion was treated even by the ablest geographers as a vulgar error";[4] and a mythic strait formed by cartographic extension of the Gulf of California indefinitely northward haunted the maps of the seventeenth century. This error was adopted by various geographers, including Fredericus 114 175x

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[1] It should be noted that Mr. F. W. Hodge, whose large acquaintance with the Southwest and its literature gives his opinion great weight, is inclined to class the Indians in question as Opata. [104]

[2] Op. cit., pp. 23-73.

[3] Sonora Histórico y Descriptiva, por F. T. Dávila, 1894, p. 8. [113]

[4] A Natural and Civil History of California; translated from the original Spanish of Miguel Venegas; London, 1759, vol. i, preface.

114 475 de Witt in 1662, Peter van der Aa in 1600, and even Herman Moll so late as 1708; but it was consistently rejected by Guillaume Delisle and other French geographers. The myth was finally punctured by Padre Kino in 1701; though even he and all his erudite co-evangels were apparently unaware that his observations only verified those of Ulloa, Alarcon, and Diaz.

475 During the stagnant sesquicentury 1545-1695 there was little record of the Seri Indians, though that little indicates recognition of their leading characteristics and their insular habitat. Writing especially of the Yaqui before 1645, Padre Andrés Perez de Ribas declared (freely translated):

> There is information of a great people of another nation called Heris; they are excessively savage, without towns, without houses, without fields. They have neither rivers nor streams, and drink from a few lagooniets and waterholes. They subsist by the chase, but at harvest time they obtain corn by bartering salt extracted from the sea and deerskins with other nations. Those nearest to the sea also subsist on fish; and it is said that there is, in the same sea, an island on which others of the same nation live. Their language is exceedingly difficult.[1]

The same author mentions cannibalism among the aborigines of northwestern Mexico, saying:

> The vice of those called anthropophagi, who eat human flesh, introduced by the devil, enemy of the human genus, among nearly all these nations during their heathenism, is more or less common. In the Acaxee and mountains this inhuman vice is customary as eating of flesh obtained by the chase; it is of daily occurrence among them; just as they sally in chase of a deer, they go out over mountains and fields in search of enemies to cut in pieces and eat roasted or boiled.[2]

[114] There is nothing to indicate that the anthropophagy was confined to, or even extended to, the Seri—a fact of interest in connection with later opinion. Ribas' reference to an island inhabited by the Heris (Seri) indicates that the occupancy of Tiburon was fully recognized by the native tribes of the region.

Throughout the seventeenth century the western coast of Gulf of California, and in lesser degree the eastern coast also, became famous for pearl oysters, and expeditions were sent out and fisheries established at different times. The earliest of these expeditions was that of Captain Juan Iturbi in 1615; he sailed well up the gulf, reaching latitude 30° according to his reckoning (though the accounts imply between lines that he turned back at the Salsipuedes), collecting many pearls along the western coast "so large and clear that for one only he paid, as the King's fifth, 900 crowns";[3] and on his return he carried the fame of the Californian pearls to Ciudad Mexico, whence it resounded to Madrid and reverberated through all Europe. One of the more noteworthy

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[113] [1] Historia de los Triumphos de Nuestra Santa Fee entre Gentes las mas Barbaras y Fieras del Nuevo Orbe; Madrid, 1645, p. 358. The "Heris" are identified as Seri by Bandelier (Final Report of Investigations among the Indians of the Southwestern United States, in Papers Arch. Inst. Am., American series, III, 1890, p. 74).

[2] Op. cit., p. 11.

[3] Venegas, op. cit., vol. I, p. 182.

pearl-gathering expeditions was that of Admiral Pedro Portel de Casanate, which covered several years; he "took a very careful survey of the eastern coast of the gulf" in 1648, but was deterred from establishing a garrison by "the dryness and sterility of the country";[1] yet neither this voyage nor any of the others appears to have resulted in any considerable rectification of the maps, or in valuable records relating to the aboriginal inhabitants. Various records indicate, however, that both pearl fishers by sea and gold seekers by land must have met the warlike Seri—and sometimes survived to enrich the growing lore concerning the tribe, and to establish the existence of their island stronghold.

New light dawned on Sonoran history with the extension of evangelization by the Order of Jesuits into that territory under the pilotage of Padre Eusebio Francisco Kino (Kaino, Kuino, Kühn, Kühne, Quino, Chino, etc.), who sailed from Chacala, March 18, 1683,[2] for California, with the expedition of Admiral Isidro Otondo y Antillon. This expedition failing, the padre returned to the mainland in 1686, and during the same year obtained authority and means for establishing missions in Sonora, of which one was to be "founded among the Seris of the gulf coast".[3] Although the record of the padre's movements is hardly complete, it would appear that several years elapsed before he actually approached, and also (contrary to the opinion of two centuries) that he never saw, the real Seri habitat. According to the anonymous author of "Apostolicos Afanes" (identified by modern historians as Padre José Ortega), Padre Kino made many journeys over the inhospitable wastes now known as Papagueria during the years 1686–1701,[4] and must have seen nearly the whole of the northern and eastern portions of the territory; but only a single journey led him toward Seriland. In February, 1694, he, with Padre Marcos Antonio Kappus, Ensign Juan Mateo Mange (chronicler of this expedition), and Captain Aguerra, set out for the coast; and Mange's itinerary is so circumstantial as to locate their route and every stopping place, with a possible error not exceeding 5 miles in any case.

According to Mange's itinerary, the explorers left Santa Magdalena de Buquibava, on the banks of Rio San Ignacio or Santa Magdalena, February 9, traveling northwestward down the valley of that river (for the most part) 12 leagues to San Miguel del Boana; the original party having been enlarged at Santa Magdalena by the addition of Nicolas Castrijo and Antonio Mezquita, with two Indians for guides. On February 10 they traveled from Boana 5 leagues southward (evidently in the valley of Rio San Ignacio, which is here 5 to 25 miles in width), to sleep at the watering place of Oacue, or San Bartolome. The

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[1] Venegas, A Natural and Civil History of California, vol. i, p. [illegible].

[2] Venegas, Noticia de la California, vol. i; Madrid, 1757, p. [illegible].

[3] The Works of Hubert Howe Bancroft, vol. xv (History of the North Mexican States, vol. i, 1531–1800), 1884, p. [illegible].

[4] Apostolicos Afanes de la Compañia de Jesus, escritos por un Padre de la misma Sagrada Religion de su Provincia de Mexico; Barcelona, 1754, p. 248 et seq.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

+175 next day they journeyed westward along the wash (of San Ignacio), stopping, as was their custom, to baptize the sick and others, and after covering 10 leagues camped at a tanque. On February 12 they continued westward over mesquite-covered plains for 4 leagues, and then turned northwestward for 3 leagues along the San Ignacio to Caborca, where they spent the remainder of the day in evangelical work. Next morning, after saying mass, they again proceeded westward "por la vega del rio abajo" (down the bank of the river); at 2 leagues distance they arrived at the place at which the river "sinks", but continued westward along the sand-wash 5 leagues farther, passing the night at a tanque of turbid water. On February 14 they again celebrated mass, and then proceeded westward over the plains ("prosiguiendo nosotros al Poniente por llanos"); at 4 leagues they reached a rancheria which was dubbed San Valentin (still persisting as a Papago temporale; the "Bisanig" of various maps), watered from a well in the river bed; proceeding westward ("prosiguiendo al Poniente") 6 leagues farther, they ascended a sierra trending from south to north ("trasmontada una sierra que sita de Sur á Norte") of which they named the principal peak Nazareno, in a dry and sterile barranca in which they afterward slept; from this sierra they saw "the Gulf of California, and, on the farther coast, four mountains of that territory, which we named Los Cuatro Stos. Evangelistas, and toward the northwest an islet with three cerritos named Las Tres Marias, and in the southwest the Isla de Seris, to which they retreat when pursued by soldiers for their robberies, which we call San Agustin and others Tiburon."[1] The record continues:

> On the fifteenth, after saying mass, we continued our route to the west by a dry and stony ravine which there is between the mountains, and at 3 leagues we met some Indians taking water from a small well in earthen jars, who, on seeing us, ran away, flying from fear; but at two musket shots we overtook them, treated them kindly, and brought them back to the well that they might assist in watering the horses, giving them all the water necessary, for the reason that they had not drunk the day before. For this reason we called this place Paraje de las Ollas. They were naked people, and only covered their private parts with small pieces of hare skin; and one of them was so aged that by his looks he must have been about 120 years old. We continued to the west over barren plains, arid and without pasture, a country as sandy as a sea-beach, until we reached the sand-banks, where the horses had great difficulty; and after another 7 leagues Father Kappus and the other people camped without water, and with only pasture of salt grass; but Padre Kino and I [Mange], with guides, and the governor of Los Dolores [Aguerra], in order to be forehanded, went west 2 leagues farther, crossing the bed of Rio San Ignacio; we arrived at the banks of an arm of the sea to which, in the sixty years that the province of Sonora had been peopled, no one had come, and we were the first who had the great privilege of seeing the Island of the Seris and that of Tres Marias, as well as the mountains of Cuatro Evangelistas, in California, on the other side of the gulf, the width of which, according to the measuring instruments at this position of 30° [actually about 30° 35′], is some 20 leagues. We returned to the bed of the river [San Ignacio], where we found a well nearly dry; we drew from it water for the horses, who had had nothing to drink, and took some ourselves, although it was turbid, muddy, and disagreeable.

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[113] [1] Translated somewhat freely from Resumen de Noticias, in Documentos para la Historia de Mexico, cuarta série, tomo i, 1856, pp. 226-228.

Now, this itinerary recounts, in definite and unmistakable terms, the incidents and localities of a journey down the valley of Rio San Ignacio 114 (also called Santa Magdalena, Altar, Ascuncion, Pitiquito, Caborca, 175 etc, in different parts of its course), from the present city of Santa Magdalena by the present town of Caborca to the coast at a point almost directly west of both Caborca and Santa Magdalena. Moreover, Kino's map of 1702[1] locates "Nazareno" on this river, and permits identification of the sierra with Dewey's "three conspicuous peaks" placed directly inland from the lagoon at the mouth of San Ignacio river, on the Hydrographic Office charts; it also locates Caborca (miswritten "Cabetka") in approximate position. Furthermore, it would have been physically impossible for the rather heavily outfitted Kino party, with carriages and churchly equipage, to traverse the untrodden and forbidding wastes from Caborca to even the nearest part of Seriland within the period of two days and a fraction, and the distance of 29 leagues (some 74 miles), detailed in the itinerary. The direct way from Caborca to Tiburon would lie due southward, over sierra-ribbed and barranca-cut plains never yet explored by white men, nor even traversed by Indians so far as known, for more than 100 miles in an air line; while the nearest practicable route, passing by way of Cieneguilla, Las Cruces, Pozo Noriega, Bacuachito, Sayula, Tonuco, Rancho Libertad, and Barranca Salina (or Aguaje Parilla) measures fully 200 miles, and requires at least six days for the passage with good horses and light equipage. The Kino party might, indeed, have turned southwestward at Caborca and pushed to the now abandoned landing at the anchorage below Cabo Lobos;[2] but the directions and distances specifically stated, and the specific identification of Rio San Ignacio at the end and at other points of the journey, all prove that this was not the route actually traveled. The terminus of the trip so clearly fixed by the itinerary is over 100 miles from the nearest point of Seriland proper; moreover, Tiburon is rendered invisible both from the coast and from Cerro Nazareno not only by distance, but by intervening sierras, notably those projecting into the Gulf to form Cabo Lobos and Punta Tepopa. It follows that Kino and Mange completely missed Seriland in their expedition to the coast, and there is nothing to indicate that they ever saw the Seri tribesmen. Their descriptions of the Indians encountered fairly fit the peaceful Papago of the interior and the timid Tepoka of the coast; and neither Mange's narrative nor other contemporary records suggest contact between the exploring party and the distinctive holders of Tiburon. The specific and repeated references in the itinerary to the island of San Agustin, or Tiburon, evidently relate to the ancient Isla de Santa

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[1] Tabula Californiæ, anno 1702 (Via terrestris in Californiam comperta et detecta per R. Patrem Eusebium Fran. Chino è S. I. Germanum. Adnotatis novis Missionibus ejusdem Sectis ab anno 1698 ad annum 1701), in Stocklein, Der Neue Welt-Bott, Augspurg und Grätz, 1726. [113]

[2] Elaborately mapped and established (on paper) as the "Puerto y Villa de la Libertad" in 1861 (Boletin de la Sociedad Mexicana de Geografia y Estadistica, 1863, x, p. 353 et seq.), and actually maintained from 1873 to 1884 as the port of Libertad (not the abandoned Rancho Libertad on the border of Seriland), or Serna, according to Dávila (Sonora Histórico y Descriptivo, pp. 149, 209).

114 x175 Ines, the modern Isla Angel de la Guarda,[1] one of the most prominent geographic features visible either from Cerro Nazareno or from the adjacent coast. There is no reason to infer that Kino or any of his party ever detected their error in identification of geographic features which must have been conspicuous in the lore of the aborigines and settlers of Sonora; indeed, the error well attests the prominence of the Seri and their habitat in the local thought of the time.[2]

x175 An effect of the Jesuit invasion was to give record to episodes growing out of alien contact with the Seri. One of the earliest of these records recounts nocturnal raids by the "Seris Salineros" for robbery and murder in the pueblos of Tuape, Cucurpe, and Magdalena (de Tepoca).[3] In January, 1700, Sergeant Juan Bautista de Escalante set out with fifteen soldiers to this mission of Santa Magdalena de Tepoca on an expedition of protection and reprisal; and here he learned that the "Seris Salineros" had killed with arrows three persons. Taking their trail, he reached Nuestra Señora del Populo only to find that ten families of converts had deserted to steal cattle, whereupon he started in search of them; he overtook them 20 leagues away, and, despite armed resistance on their part, arrested and whipped them and returned them to the pueblo. Among the captives were two "Seris Salineros" concerned in the murders at Tepoca, and three others guilty of similar outrages at the Pueblo de los Angeles de Pimas Cocomacagües; these he executed as a warning to the others, after taking their depositions and confessions, and after they were shrived by Padre Adano Gilo (or Adan Gilg), the priest of Populo. This duty performed, he resumed the trail of the Seri, accompanied by the padre; and, approaching the sea, he found a port, as well as an island to which most of the Seri had escaped in balsas, leaving eight of their number, who were arrested and turned over to the priest.[4]

This is the first record of actual invasion of Seriland by Caucasians. According to Bancroft, it "may be deemed the beginning of the Seri wars which so long desolated the province".[5]

The next noteworthy episode occurred when Sergeant Escalante, who had returned to Tuape and Santa Magdalena (de Tepoca), again set out for the coast on February 28, 1700, taking a new route (probably down Rio Bacuache). He traveled 30 leagues, passing four watering places, and on March 6 arrived at the Paraje de Aguas Frias (probably

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[113] [1] Identified by Alexandre de Humboldt in his Carte Générale du Royaume de la Nouvelle Espagne, of 1804 (in Atlas Géographique et Physique, Paris, 1811). So late as 1840 the old name was sometimes retained, e. g., on Robert Greenhow's map accompanying his History of California and Oregon.

[2] In one of the last letters from his pen, dated November 25, 1899, the late Dr Elliott Coues wrote, "I find you trailing Kino and Mange in 1694 precisely as I had them, and I make no doubt of the substantial accuracy of your typewritten MS. I accept your position that the large island they sighted and named San Agustin was not Tiburon, but Angel de la Guarda Isl."

[113] [3] A mission founded in 1688 by Padre Melchor Bartiromo (Historia de la Compañia de Jesus en Nueva España, que estaba escribiendo el P. Francisco Javier Alegre, 1842, tomo III, p. 117), of which the location has long been lost.

[4] Documentos de Noticias, op. cit., tomo I, p. 321.

[5] Op. cit., p. 273 (the year is misprinted 1600 on this page and in the index).

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Pozo Escalante or Agua Amarilla of recent maps); there, three nights later, he was attacked by archers, who discharged arrows into the soldiers' camp and immediately fled. Subsequently, seeking their enemies close to the sea 20 leagues away (probably on the eastern shore of El Infiernillo), Escalante and his men were joined by 120 Tepoka people; and, failing to find their assailants, they gave these allies a supply of provisions and turned them over to Padre Melchor Bartiromo, who allotted to them, in conjunction with 300 deserters from the missions who had been captured by the soldiers, not only lands but corn for sowing and eating. Having thus disposed of the Indians, Escalante and his soldiers returned to the coast on March 28, 1700, to punish the boldness and pride of the Indians in their stronghold ("los indios seris de la rancheria del medio"). Passing by balsas to the island, "they overtook those who caught up bows and arrows to fight, of whom they slew nine as an example to the others"; and these others they captured and sent to the priest at Populo—after which the party returned to Cucurpe in time to celebrate Holy Thursday on April 8.[1]

[14] This contemporary recital, written by Escalante's acquaintance and rival in exploration and subjugation, Juan Mateo Mange, bears both internal and external evidence of falling well within the truth. It is corroborated and extended by Alegre's version, written forty or fifty years later on data at least partially independent: according to Alegre, Escalante and his soldiers went on balsas to the "Isla de los Seris, which is called San Agustin by some, but more commonly Tiburon". He added that the retreats of the Seri after the murders and robberies committed at the pueblos of Pimeria, as well as the abundant pearl fisheries, have made this place highly noted ("muy famosa"); and he correctly described the strait and the projecting sand-banks opposite the center of the island, which reduce the open water to a width of barely half a league: "At this constriction the Seri cross in balsas composed of many slender reeds, disposed in three bundles, thick in the middle and narrowing toward the ends, 5 and 6 varas in length. These balsas sustain the weight of four or five persons, and with light two-bladed paddles 2 varas in length cut the water easily." He remarked also that while a part of the Seri seen on the island by Escalante were captured the major portion escaped, "fleeing with great swiftness".[2]

[114] ¶ The early record is also corroborated, in a manner hardly credible in regions of more rapid social and physiographic development, by local tradition and by the survival of the well excavated by the party and still bearing Escalante's name.

On the whole it may be considered established that Sergeant Escalante crossed El Infiernillo and visited Tiburon in 1700; and, although it may be possible that pearl fishers or others preceded him, he must be credited with the first recorded exploration of strait and island by white men.

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[1] Resumen de Noticias, op. cit., tomo i, pp. 321-322.

[2] Op. cit., tomo iii, pp. 117-118.

114 +175 The specific references to the Seri and their insular habitat by Ribas, by Kino and his chronicler, and by the various recorders of Escalante's expeditions, establish the extent of the lore concerning people and place, even before the end of the seventeenth century. This lore found measurable expression in maps prepared in Europe, even by those cartographers who purposely or otherwise ignored the surveys of Ulloa and Alarcon. In his "newest and most accurate" map of America, 1662, Fredericus de Witt depicted the Gulf of California ("Mare Vermio olim Mare Rvbrvm") as extending northward to connect with the mythic Strait of Anian ("Fretum Aniani"), yet he located Rio Colorado ("R. de Tecon") and Rio Gila ("R. de Coral") approximately, placing the largest island in the gulf, named "I. Gigante", just off their (common) embouchure;[1] and an anonymous map of the Pacific ocean, apparently by the same author and of closely corresponding date, is essentially similar.[2] The map of the northern part of America by Peter van der Aa, about 1690, is also similar, though on smaller scale;[3] and the same may be said of that cartographer's new map of America, issued about the same time, in which the island is designated "I. de Gigante".[4] A somewhat later map by Van der Aa (although supposed to have been issued in 1690) is greatly improved; the "Mer de Californie" is brought to rather indefinite end a little above the mouth of Rio Colorado ("R. de bona guia"); the "Pimases" are placed in proper position with respect to the Gila ("R. de Coral"), and the "Herises" are located a third of the way and the "Ahomeses" half way down the gulf; while a greatly elongated island stretches from the one to the other off the province of "Sonora".[5] The origin of the name "Gigante" is uncertain; it may be borrowed from a land feature. As used in some cases it apparently connotes the size of the island, while the use in other cases evidently connotes gigantic inhabitants.

Naturally, in view of the slow and imperfect diffusion of knowledge characteristic of early times, cartographers were dilatory in introducing the observations of Kino and Escalante. The map of America by Herman Moll, about 1708,[6] represents the "Gulf of California or Red Sea", connecting the "South Sea" with the "Straits of Annian", and depicts Rio Colorado ("Tison R.") and a composite river apparently designed to represent Rio Gila (made up of "R. Sonaca", "R. Azul", and "R. Colorado", with two other long tributaries from the south) embouching separately a little below midlength of the gulf. Somewhat above these are three islands, one of which is designated "Gigate

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113 [1] Novissima et Accuratissima Septentrionalis ac Meridionalis Americæ, Amsterdam. (In American Maps, 1670-1795, Library U. S. Geological Survey, 125.)

[2] Mar del Zvr, Hispania, Mare Pacificum. (Ibid., 128.)

[3] 'T Noorder Deel van America, Leyden. (Ibid., 179.)

[4] Nouvelle Carte de l'Amerique, Leyden. (Ibid., 188.)

[5] L'Amerique Septentrionale Suivant les Nouvelles Observations, etc., Leyden. (Ibid., 181.) This island is not named, but is undoubtedly the Santa Ines of several other maps—the Angel de la Guarda of the present.

[6] North America, according to ye Newest and most Exact Observations, etc., London. (Ibid., 89.)

Isle", while "Pimeria" is located correctly with respect to Rio Gila, 114
though too close to the sea, and "R. Sonora" is located too far southward, with a province of the same name just north of it. There is no 175
reference to the Seri, but a locality in Lower California opposite Sonora is named "Gigante".[1] Quite similar is the map of North America drawn and engraved by R. W. Seale about 1723, though the provinces of Pimeria and Sonora are brought closer together, while the magnified Gila is named Colorado ("Tison R." also being retained).[2] The map of North America presented to the Duc de Bourgogne by H. Iaillot about 1720 is much the same; the "Isle de Californie" is separated from the continent by "Mar Vermejo ou Mer Rouge" with four islands, of which the southernmost, "I. de Gigante", lies somewhat below the separate mouths of "R. de Tecum" and "R. de Coral", while the extravagantly magnified Gila of previous maps is partially replaced by a still more extravagant "R. del Norte", rising in a mythical lake above the fortieth parallel and falling into the gulf under the thirtieth.[3] The map of Mexico and Florida by Guillaume "De l'Isle", published in Amsterdam by Covens and Mortier, 1722, patently begs the question as to the northern extension of "Mer de Californie" by cutting off the cartography at the critical point. "R. del Tison" is retained as a subordinate river, while the separate and greatly magnified Gila corresponds with that of the Iaillot map, the upper tributary being "R. Sonaca ou de Hila"; "R. di Sonora" is depicted in approximate position, with the province of the same name extending northward and "Seris" located a little above the mouth of the river. No islands are shown in the vicinity, but the name "Gigante" appears on the western coast of the gulf, about latitude 29°.[4] The map of North America by the same author, supposed to date about 1740 though probably earlier, recalls the Van der Aa map of 1690 (?); "Mer de Californie ou Mer Vermeille" ends doubtfully about latitude 34°, where "R. de bona guia" and "R. de Coral" bound the "Campagne de bona guia", and fall separately into the gulf near its head; the "Pimases", "Herises", "Sumases", "Aibinoses", and "Ahomeses" are distributed thence southward along the coast to about the twenty-eighth parallel, while a nameless island stretches parallel with the coast of "Sonora" from about 28° to 32°.[5]

With one or two exceptions, these maps demonstrate the prevailing neglect or ignorance of the classic explorations along the western coast of America early in the sixteenth century; yet they introduce features representing vague knowledge of the Seri Indians and their insular habitat, undoubtedly derived (like that of Padre Kino and Sergeant Escalante anterior to their expeditions) from native sources.

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[1] Doubtless the mountain "La Giganta", named by Admiral Otondo toward the end of the seventeenth century (Documentos para la Historia de Mexico, cuarta série, 1857, tomo v, p. 122), and noted 113
by Hardy in 1828 (Travels in Interior of Mexico in 1825, 1826, 1827, and 1828, London, 1829, p. 243).

[2] A map of North America, with the European Settlements and whatever else is Remarkable in ye West Indies, from the latest and best Observations. (American maps, loc. cit., 119.)

[3] Amerique Septentrionale Divisée en Ses Principales Parties. (Ibid., 109.)

[4] Carte du Mexique et de la Floride, des Terres Angloises et des Isles Antilles, etc. (Ibid., 126.)

[5] L'Amerique Septentrionale . . . par G. de l'Isle: Amsterdam, Chez Pierre Mortier. (Ibid., 172.) The island is, of course, Santa Inez, i. e., Angel de la Guarda.

+114 +175 The Kino map of 1702 gradually came to be recognized as trustworthy in important particulars, and brought to an end the baseless extension northward of the gulf; yet it was seriously inaccurate in details, particularly those affected by the erroneous identification of the second-largest island in the gulf with the largest. Accordingly Isla Santa Ines (the modern Isla Angel de la Guarda) is omitted from its proper position, and replaced by "I. S. August" close to the eastern coast; yet the land-mass of Tiburon is roughly defined as a peninsula bounded on the north by "Portus S. Sabina" (Bahia Tepopa) and on the south by "Baya S. Ioa. Bapt." (Bahias Kunkaak and Kino). Two other considerable islands are represented as dividing the width of the bay west-southwest of "I. S. August", and are named "2. Saltz-Insel"; although evidently traditional, their positions correspond roughly with those of San Esteban and San Lorenzo. The map locates the "Topokis" between Rio San Ignacio and Rio Sonora, with the "Guaimas" immediately below the latter.[1] Kino's three pier-like islands bridging the gulf were adopted in Delisle's map of America, published in Amsterdam by Jean Cóvens and Corneille Mortier about 1722, in greatly reduced size, though larger islands are shown farther northward; and an ill-defined peninsula corresponding to Tiburon is retained.[2] The D'Anville map of 1746 embodies Kino's discoveries about the head of the gulf and retains his pier-like islands, yet not only corrects his error in omitting the second greatest island of the gulf, but perpetuates equal error in the opposite direction: "I. de S. Vicente" is made the largest of the islands and located near the western coast a little below the mouth of Rio San Ignacio, while "I. de Sta. Inés" is made second largest and is located southeast of it and near the eastern coast. The third island in size is named "Seris", while the fourth and fifth, completing the Kino trio, are called "Is. de Sal", and the mainland projection remains defined on the south by "B. de S. Juan".[3] The Vaugondy map of 1750 locates the transverse trio of islands in greatly reduced size, and omits the larger islands of the gulf.[4] The islands, etc., of the Covens and Mortier map of 1757 correspond closely with D'Anville's map of 1746, and a nameless bay defines a peninsula in the position of Tiburon.[5] The Pownall map of 1783 also follows that of D'Anville so far as the islands are concerned, though the position of that corresponding to the present Angel de la Guarda lies beyond the limit of the sheet; "I. de Inez" lies some distance below the mouth of "Sta. Madalena" river, off the territory of the "Sobas" and "Seris"; "Seris I." is smaller, the two "Sall Is." are smaller still, and there is an ill-defined projection of the mainland, bounded on the south by "B. de S. Juan".[6]

While the makers of the later of these maps were engaged in perpet-

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[1] Map in Stöcklein, op. cit.

[2] Carte d'Amerique, etc. (American maps, loc. cit., 29.)

[3] Amérique Septentrionale . . . par le Sr. d'Anville, Paris. (Ibid., 30 and 31.)

[4] Amérique Septentrionale . . . par le Sr. Robert de Vaugondy, Paris. (Ibid., 27.)

[5] L'Amerique Septentrionale, etc., Amsterdam. (Ibid., 169.)

[6] A new map of North America, with the West India Islands. . . . Laid down according to the Latest Surveys, and Corrected from the Original Materials of Govr. Pownall, London. (Ibid., 23.)

uating the vestigial features, erroneous and otherwise, of the Kino map, the Jesuits of peninsular California employed themselves in reexploration of the western coast of the gulf, a particularly productive expedition being that of Padre Ferdinando Consag, in 1747. The padre's map represents the western coast in considerable though much distorted detail, and depicts "I. del Angel de la Guarda" as a greatly elongated body, a third of the way across the gulf from the western coast; next in size is "I. d S. Lorenzo"; then come "I. d S. esteban" in the middle of the gulf, and in the same transverse line, but quite near the eastern coast, "I. d S. Agustin", the two being approximately equal in size, while above and about equidistant from them is "I. de S. Pedro", about half so large as either. These, with four smaller islands near the western coast, bear the general designation "Islas de Sal, si puedes", which in this case may be translated "Salt (possibly) islands," though later forms of the name imply a quite different meaning, i. e., "Islands of Get-out-if-(you-) can", or "Get-out-if-canst".[1] The eastern coast shows two deep indentations named "Tepoca" and "Bahia d S. Juan Bautista" bounding a peninsula corresponding in position to insular Serfland.[2] It is evident that the cartography of the eastern coast is based on that of Kino, that the island of San Agustin is hypothetic, and that the land-mass of Tiburon proper is not separated from the mainland, while San Pedro island is apparently the Isla Patos of the present. The more general map by Venegas combines details of the Consag, Kino, and other maps; "I. del Angel de la Guarda" is greatly magnified and placed somewhat too far northward, while both San Lorenzo and San Esteban are made much larger than "I. San Agustin", which is represented as scarcely larger than "I. de S. Pedro"; the mainland is indented to

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[1] It seems probable that various early cartographers were misled by the traditional lore of "salineros", or salt-seeking Indians, in combination with the unusual designation of these islands. In his text Padre Consag rendered the term "Sal-si-puedes", and strongly emphasized the violent tidal currents and consequent dangers to vessels which suggested the vigorously idiomatic designation to early navigators (Venegas, Noticia de la California, III, p. 149); in the Venegas map (ibid., tome I, p. 1) the name is used without the qualifying comma, and in the text it is hyphenated "Sal-si-puedes", the author observing concerning the local currents, "These currents run with astonishing rapidity, and their noise is equal to that of a large rapid river among rocks; nor do they run only in one direction, but set in many intersected gyrations" (A Natural and Civil History of California, p. 43). And the "Sacerdote Religioso", whose letters place him among the authorities on Lower California, wrote: "In the narrows of the gulf are a multitude of islets, for the passage being so dangerous to vessels they are called *Sal si puedes*" (Noticias de la Provincia de Californias, Valencia, 1794, p. 11); while Hardy, who navigated this portion of the gulf early in the present century (Travels in the Interior of Mexico, London, 1829, p. 270), mentioned a passage "between the islands called 'Sal si Puedes' (get back if you can)". So, too, Duflot de Mofras wrote of "les îles de Sal si puedes (Sors si tu peux)" in his Exploration du Territoire de l'Orégon, Paris, 1844, p. 219. Bancroft properly reduced the obscure connective phrase to the single descriptive term "Salsipuedes," and noted the signification as "Get out if thou canst" (North Mexican States, vol. I, p. 444). In 1873-1875 Dewey restricted the name to a single island and a channel, and emphasized the currents in the latter "against which sailing vessels found it almost impossible to make any headway" (The West Coast of Mexico, Publication 56, U. S. Hydrographic Office, Bureau of Navigation, 1880, p. 113), and rendered the name "Sal-si-puedes" in the text, "Sal si puedes" on the charts. Hittell's reference to "the group of islands then known as Salsipuedes, the largest of which is now called Tiburon" (History of California, vol. I, p. 225), doubtless expresses the early use of the term precisely, save that the present Tiburon was long treated as a part of the mainland, while its names were applied to Isla Turner or some other islet. Vide postea, p. 45.

[2] Seno de California, etc., in Venegas, Noticia de la California, tomo III, p. 194.

114 great depth by Kino's "Pto. de Sta. Sabina" and "Bahia de Sn. Juan Baptista", in such wise as to define a decided peninsula, while the +175 "Seris" are located 2° farther southward and below Rio Sonora, and the "Guaimas" still farther down the coast.[1] Another illustration of the chaotic notions of the time is afforded by the Baegert map, published in 1773, and credited largely to Consag.[2] The sheet locates the author's routes of arrival (1751) and departure (1768), the former overland from far down the coast to the mouth of "Torrens Hiaqui," and thence directly across "Mare Californiae", via "Tiburon" (lying just off the mouth of the river, in latitude 28°), with the usual congeries of islands, headed by "I. S. Ang. Gart" (Angel de la Guarda), in latitude 30°–31°, and the usual shore configuration above the debouchure of Rio Sonora; "Los Seris" are located in the interior between Rio Sonora and "Torrens Hiaqui", while just above the mouth of the latter lies "Guaÿmas M.[ission] destr. per Apostatas Seris". The Pownall map of 1786 incorporates Padre Consag's results on reduced scale, but omits the islands toward the eastern shore of the gulf.[3]

On the whole the cartography of a century indicates that the striking explorations of Ulloa, Alarcon, and Diaz were utterly neglected; it indicates, too, that Kino's observations were promptly adopted, but that his erroneous identification of the island seen from Nazareno occasioned confusion; yet there is nothing to indicate definite knowledge of Escalante's discoveries. Apparently the cartographic tangle began with the failure to discover the narrow strait traversing Seriland, coupled with hearsay notions of an insular Seri stronghold; it was complicated by Kino's erroneous identification of the hearsay island; and it grew into the mapping of a traditional islet about the position of Tiburon, and the extension of the mainland into a peninsula embracing the actual land-mass of that island[4]—the islet lying about the site of the modern Isla Tassne, and often appearing under the name San Agustin.[5] Accordingly, so far as maps are concerned, Escalante's discoveries were no less completely lost than those of Ulloa.

+175 The recorded history of the Seri Indians during the earlier two-thirds of the eighteenth century is largely one of zealous effort at conversion on the part of the Jesuit missionaries, who repeatedly approached the territory by both land and sea; yet the records touch also on events of exploration and on the characteristics of the tribe.

One of the earliest chroniclers was Padre Juan Maria de Sonora, who in 1699–1701 inspected many of the missions of Lower California and

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[1] Noticia de la California, tomo i, p. 1.

113 [2] California, per P. Ferdinandum Consak, S. I., et alios, in Nachrichten von der amerikanischen Halbinsel Californien. . . . Geschrieben von einem Priester der Gesellschaft Jesu (identified as Jacob Baegert by Rau, Smithsonian Report, 1863, p. 352); Mannheim, 1773.

[3] A New Map of the Whole Continent of America, London. (American maps, loc. cit., 4.)

[4] This cartography reappeared occasionally up to about the middle of the nineteenth century, as illustrated by the Greenhow map accompanying the edition of his history issued in 1845.

[5] This condition is revealed in Mühlenpfordt, Versuch einer getreuen Schilderung der Republik Mejico, etc.; Hannover, 1844.

Sonora and acquainted himself in exceptional degree with the neophytes and their wilder kindred. About the beginning of 1701 he crossed with great danger ("pasé con grande peligro") from Loreto to the eastern coast, and, accompanied by two "Indios Guaymas, caciques," proceeded among the Sonoran settlements.[1] On February 18 he was at the new town of Magdalena (de Tepoca), "where, with great labor, Padre Melchor Bartiromo had gathered more than a hundred souls of the maritime nation of Tepocas", and where the visitors were accorded an enthusiastic reception. He went on to say:

> It is notable that where the Tepocas and Salineros are located the sea is populous with islands [muy poblado de islas], and the first of these toward the coast contains foot-folk [gente de á pié], who live on it. Then there are two islands much nearer the mainland of California, and it is said that they [the Tepoka] are able to navigate in their barquillas [balsas] to the adjacent coast; and the possession of these Tepocas, who are all Seris by nation, of certain words of the Cochimies of [Lower] California, who occupy the opposite coast, indicates that they have communicated in other times.[2]

This record is especially significant as indicating the affinity between the Seri and the Tepoka, as establishing the transnavigation of the Gulf by the Seri craft, and as explaining the possible passage of loan words from the Cochimi to the Seri, and presumptively from the Seri to the Cochimi.

A notable visitor to the shores of Seriland was Padre Juan Maria Salvatierra, who had previously "made a peace betwixt the Seris cristians, and the Pimas", soon violated by the former "in the murder of 40 Pimas". In August, 1709, he essayed the recovery of a vessel wrecked "on the barren coast of the Seris", which these Indians were engaged in looting and breaking up for the nails; and, by dint of his "persuasive elocution . . . not a little forwarded by the respectable sweetness of his air", aided by timely explosions of the bark's pateraroes (mortars), he induced restitution, the restoration of peace, and the reinstatement of several of the robbing and murdering Seri as communicants.[3] Padre Salvatierra observed the distinctive character of the Seri tongue, but made no extended exploration of Seriland, either coastwise or interior.

The next noteworthy visitor was Padre Juan de Ugarte, who, at the instance of Salvatierra, undertook an exploration of the gulf coast complementary to Kino's land explorations about its northern terminus. Ugarte was the Hercules of Baja California history; he awed the natives by slaying a California lion, unarmed save with stones, and enforced orderly attention to his catechizing by seizing an obstreperous champion by the hair, lifting him at arm's length, and shaking him into submission; and under incredible difficulties due to absence of material and distance of timber, he built the first vessel ever con-

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[1] Documentos para la Historia de Mexico, cuarta série, tomo v; Mexico, 1857, pp. 125-130.

[2] Ibid., p. 132.

[3] Venegas, A Natural and Civil History of California, vol. i, pp. 405-411.

+175 structed in California, the bilander (two-master) *El Triunfo de la Cruz*—a fit prototype of the *Oregon* of nearly two centuries later—which proved to be the finest craft ever seen on the coast, and played an important rôle in later history.[1]

On May 15, 1721, Ugarte embarked at Loreto (Lower California) and skirted the coast northward to the Islas de Salsipuedes, whence he crossed the gulf to "Puerto de *Santa Sabina*, ó *Bahia de San Juan Bautista*" near the islands "en la Costa de los *Tepoquis*, y *Seris*".[2] The Indians soon appeared and, in excess of amity (ascribed to the display of the cross), threw themselves into the sea and swam to the ship, and afterward aided in taking water; for "early next day the Indians appeared in troops, and all with water-vessels; the men each with two in nets hanging from a pole across their shoulders, and the women with one."[3] After watering, the Ugarte party, accompanied by two of the Indians, set sail in the bilander with a pinnace and a canoe, and in the early morning found themselves in a narrow channel apparently separating the island from the mainland; the pinnace and the canoe were dispatched to courier the larger craft; but "the channel, besides being narrow and crooked, was so full of shoals that . . . the bilander stuck and was in danger of being lost", while the canoe and the pinnace were caught by the currents and carried "to such a distance as not to be seen". Finding it impossible to return, the party pushed on, and "after three days of continual danger, they reached the mouth of the channel, where they found the boat and pinnace"; when they were surprised to find the strait opening, not into the gulf, but into a great and spacious bay. Approaching a landing, they were met by Indian archers wearing feather headdresses and comporting themselves in a threatening manner; but these were pacified by the two Indians brought from the watering place. Here Ugarte was taken ill, and the islanders made thirteen "balsillas" on which fifty Indians passed to the bilander and urged him to land on the island, where they had prepared a house for his reception; this he did, despite severe suffering, and was received with great ceremony. After a short stay, the party explored the coast northward, stopping off Caborca to lay in supplies, and discovered (anew and independently) the mouth of the Colorado; then, despite repeated risk and much suffering from the exceeding tides, severe storms, and the terrible tiderips off Islas Salsipuedes, they finally made return to Loreto.

The itinerary of this voyage recounts the first recorded navigation through El Infiernillo; and, while it is too meager to permit retracing the trip in detail, it seems practically certain that the vessels entered Bahia Tepopa, watered at Pozo Hardy, passed around Punta Perla and thence southward through the strait, and emerged through Boca Infierno into Bahia Kunkaak, afterward proceeding westward and

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[1] Hittell, op. cit., vol. i, pp. 191-192, 219-221.

[2] Venegas, Noticia de la California, tomo ii, p. 343.

[3] Venegas, A Natural and Civil History of California, vol. ii, p. 46.

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northward around the outer coast, and thus circumnavigating Tiburon. While Ugarte's pilot, Guilermo Estrafort (or Strafort),[1] displayed great energy and courage in charting the coast, the voyage neither yielded published maps nor affected current and subsequent cartography; for, although Ugarte's narrative and Estrafort's map and journal were sent to Mexico to be presented to the viceroy, they were apparently lost.[2] Nor does the itinerary indicate recognition of Kino's error in identification of the Seri island, though several days were occupied in voyaging from the island to the latitude of Caborca; indeed, it seems probable that it was either Salvatierra, Kino's intimate associate, or Ugarte, Kino's colleague and Salvatierra's intimate friend, who fixed the name of the pioneer padre on the geographic features still known as Bahia Kino and Punta Kino—features which Kino never knew, as already shown.

Although both Salvatierra and Ugarte were on superficially amicable terms with the Seri, the amity was evidently of the shallowest and most evanescent sort. Venegas says:

> Of the *Seris* and *Tepocas*, although the padre passed among them with the pay in his hand, he could not induce them to assist him in any way, even when they saw the party in the greatest distress; while others toiled, they reclined with the greatest serenity, nor have they shown the priests the slightest civility during the forty years of their acquaintance—they utterly refused to part with ollas of coarse ware, even for a liberal exchange.[3]

And the contemporary lore, crystallized in current administrative policy and later records, and corroborated by deep-rooted customs maintained for centuries and still persisting, is significant; it indicates that then, as now, it was the habit of the Tiburon islanders to flee from or fawn upon powerful visitors, to ambush or assail by night parties of moderate strength, to openly attack none but the weak or defenseless, yet ever to delight in tricking the credulity and consuming the stores and stock of aliens, and to revel in shedding alien blood when occasion offered. The adventurous hunters and gold seekers of the mainland, and the still hardier pearl fishers of the coast, wrote nothing; but both civil and ecclesiastical records imply common knowledge that weaker parties venturing into the purlieus of Seriland never returned—they disappeared and left no sign.

While Salvatierra and Ugarte were occupied on the coast, the missionaries were no less industrious in the interior. The mission of Santa Magdalena de Tepoca was apparently soon abandoned; but the so-called Seri missions at Populo (Nuestra Señora del Populo) and Angeles (Nuestra Señora de los Angeles) were maintained from the time of Kino's coming up to the expulsion of the Jesuits (in 1767), while that at Nacameri was nearly as well sustained. The relations f 175 of these missions to Seriland are significant: according to the anonymous author of Sonora's classic, "Rudo Ensayo", written in 1763, Nacameri lay in the valley of Rio Opodepe (or Horcasitas), 7 leagues below the town of the same name (still extant); 9 leagues down the same stream lay Populo (on the site of the present town of Horcasitas); Angeles lay 3 or 4 leagues farther downstream, or over 12 leagues above the site of Pitic[1] (the present Hermosillo); while various references indicate that the temporary mission of Santa Magdalena was located in the same valley, probably a few leagues above Opodepe.[2] Accordingly, the missions ranged from 100 to 150 miles inland, measured in an air line, or four hard days' journey, as shown by Escalante's record, from the Seri coast. The nearest mission at Angeles was 75 miles, or three days' journey, from the inland margin of Seriland proper, and the intervening territory was a depopulated expanse ("el grande despoblado") according to Villa-Señor,[3] ranged but not inhabited by Seri and Tepoka hunting parties. Never traversed by white men, save those of Coronado's parties nearly two centuries before and of Escalante's hurried expeditions of 1700, this "despoblado" was practically unknown; even the surprisingly well-informed author of "Rudo Ensayo" was unaware of the existence of Rio Bacuache, and noted only such prominent mountains as Cerro Prieto and "Bacoatzi the Great in the land of the Seris",[4] lying far outside the tribal home. The remoteness of the missions from the habitat of the tribe bears testimony to the dread with which they were regarded, and to the slightness of the influence exerted on the tribesmen by the zealous padres.

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[1] An Englishman named (probably) William Strafford, according to Bancroft; op. cit., vol. I, p. 444.

[2] Venegas, Noticia de la California, tomo II, p. 279.

[3] Ibid., p. 288.

Despite the efforts of both priesthood and soldiery, the number of Seri converts at the missions was limited. In 1700 there were ten families at Populo; true, they had slipped away to maverick the herds ("por ladrones de ganados"), but Escalante overtook them and whipped them back to the shadow of the church; later he captured 120 Tepoka people (probably some twenty families, with a few strays), and recaptured 300 backsliders (perhaps fifty families or more), and haled them all to the mission, where lands were allotted to them and where they were carefully guarded by the ecclesiastics—until opportunity came for reescape; and to this congregation Escalante added a few Seri prisoners taken on Tiburon, as noted above. In 1727 Brigadier Pedro de Rivera noted a dozen tribes in central Sonora, including the "Seris" and "Tepocas", numbering 21,746 "of all ages and both sexes", all receiving

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113 [1] Rudo Ensayo, Guiteras' translation in Records of the American Catholic Historical Society of Philadelphia, vol. v, 1894, p. 121. Bandelier identified the author as Padre Nentwig, S. J., of Huasavas, eastern Sonora (Final Report of Investigations among the Indians, etc., part 1, in Papers of the Archæological Institute of America," vol. III, 1890, p. 78). The name is written "John Nentuig" in a third-person reference in Guiteras' translation; but an editorial footnote adds, "No doubt a printer's mistake for Mentuig—L. F. F [lick]" (ibid., p. 191).

[2] Noticias Estadisticas del Estado de Sonora, by José Francisco Velasco, Mexico, 1850, p. 121.

[3] Theatro Americano, Descripcion General de los Reynos, y Provincias de la Nueva-España, y sus Jurisdicciones, Joseph Antonio de Villa-Señor, y Sanchez, segunda parte; Mexico, 1748, p. 392.

[4] Op. cit., p. 123.

the ministrations of "los Padres de la Compañia de Jesvs". He added: "Besides the above-named Indians there are found in the middle part of the province of Ostimuri, in the western part bordering on the Gulf of California, certain nations of pagans in small numbers; they are the Salineros, Cocomaques, and Guaymas."[1] Neither the numbers of Seri and Tepoka at the missions, nor the respective proportions at the missions and on the native habitat, were recorded by the brigadier. According to Alegre, eighty families (including those transferred from Pitic) were gathered at Populo and Angeles, under the specially sedulous efforts of Judge José Rafael Gallardo, in 1749;[2] although Padre Nicolas de Perera, "who for the longest time bore with their insolent behavior, . . . did not see more than 300 hundred persons when they had all come together".[3] It would appear that the great majority of the Populo and Angeles converts belonged to the Tepoka, while others belonged to the Guayma and Upanguayma, with whom the Seri were at war about that time;[4] yet there were enough representatives of the Seri to gain a shocking character for sloth, filth, thievery, treachery, obstinacy, and drunkenness. Assuming that a quarter of the converts were Seri (and this ratio is larger than any of the known records would indicate), there could hardly have been more than a hundred of the tribe gathered about the several missions at this palmiest time of Jesuit missionizing; and the records show that by far the greater portion of these were women, children, cripples, and vieillards, the warriors being commonly slain in the vigorous proselyting expeditions conducted by the civil and military coadjutors of the padres. If at this time the Seri population reached the 2,000 estimated by Dávila[5] and others, the proportion of proselytes (or apostates from Seri naturalism) was but 5 per cent of the tribe and naturally comprised the less vigorous and characteristic element. The writer of "Rudo Ensayo" reckons that during six years preceding 1763 the Seri stole from the settlers (for eating, the sole use to which they put such stock) "more than 4,000 mules, mares, and horses",[6] i. e., enough to sustain two or three hundred people, or a full thousand if this meat formed no more than a fourth or a fifth of their diet, as the contemporary records imply—and this was after the "extermination" of the Seri by Parilla in 1750.

Evidently the good padres greatly overestimated their knowledge of and influence on this savage yet subtle tribe; actually they touched the Seri character only lightly and temporarily, contributing slightly

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[1] Diario y Derrotero de lo Caminado, Visto, y Observado en el Discurso de la Visita general de Precidios, situados en las Provincias Ynternas de Nueva España; Guathemala, 1736, leg. 1514-1519.

[2] Historia de la Compañia de Jesus, vol. III, p. 280.

[3] Rudo Ensayo, p. 182.

[4] Bancroft, op. cit., vol. I, pp. 532-533. The former were annihilated or driven into the Yaqui country by 1763 (Rudo Ensayo, p. 189).

[5] Sonora Histórica y Descriptiva, p. 229.

[6] Ibid., p. 148.

175 to spontaneous acculturation, but never coming into relation with the tribe as a whole.

And despite the efforts of both soldiers and priests, the savages continued to ravage the settlements, to repel pioneering, to decimate the herds and murder the vaqueros who sought to protect them, to plunder everything portable and ambuscade punitive parties, and even to engage in open hostilities. "In 1730 the Seris, Tepocas, Salineros, and Tiburon islanders kept the province in great excitement, killing twenty-seven persons and threatening all the pueblos with a general conflagration";[1] and both before and after this date the recorded sanguinary episodes were too frequent for even passing mention, while the indications between lines point to robberies and assassinations and minor conflicts too many for full record even by the patient chroniclers of the time.

Sometime about the beginning of the eighteenth century the Spanish settlements pushed down Rio Sonora beyond the confluence of the Opodepe to the last water gap, made conspicuous by a marble butte in its throat and by the fact that here the sometimes subterranean flow always rose to the surface in a permanent stream of pure and cool water. Here, according to Padre Dominguez, "it was attempted to locate the Presidio of Cinaloa against the rapacity of the Zeris, Tepocas, and Pimas; and here General Idobro, of Cinaloa, wished to found a pueblo of Tiburon Indians, brought for the purpose [probably from Populo and Angeles] that they might be kept in subjection, but most of them returned to their island and attempted to make attacks from their hiding places."[2] Nevertheless, the padre found 29 married persons, 14 single, and 99 children of these "races" at the rancho. At the time of his visit the place was known as Rancho del Pitquin; later it became the Pueblo of Pitic, or Pitiqui, or Pitiquin, or San Pedro de Pitic,[3] and long afterward the city of Hermosillo, while the beautiful marble butte was christened Cerro de la Campana.

By 1742 the settlements were so far extended as to warrant the establishment of a royal fort in the water-gap at Pitic;[4] and the ecclesiastics kept pace with the military movement by founding the mission of San Pedro de la Conquista,[5] or "Pueblo de San Pedro de la Conquista de Seris"[6] (now abbreviated to "Pueblo Seris", or merely "Seris"); both fort and mission being designed primarily for better

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[1] Bancroft, op. cit., p. 517.

[2] Diario del Padre Dominguez en Sonora y Sinaloa, 1731; manuscript in archives of the Bureau of American Ethnology.

[3] This place on Rio Sonora is not to be confounded with the Rancho (afterward Pueblo) of Pitiqui or San Diego de Pitiqui (The Geographical and Historical Dictionary of America and the West Indies * * * of Colonel Don Antonio de Alcedo, by G. A. Thompson, London, 1814, vol. IV, p. 150), or Pitic chiquito (Bol. Soc. Mex. Geog. y Est., vol. VIII, 1860, p. 454), or Pitiquin, now the town of Pitiquito on Rio San Ignacio.

[4] Alegre, Historia de la Compañía de Jesus, tomo III, p. 280; Villa-Señor, Theatro Americano, segunda parte, p. 392; Rudo Ensayo, p. 159.

[5] Bancroft, op. cit., vol. I, p. 528.

[6] Reise-Erinnerungen und Abenteuer aus der neuen Welt, von C. A. Pajeken, Bremen, 1861, p. 87.

protection of the settlements against Seri sorties. These outposts brought the missionaries and their soldier supporters a day's journey nearer Seriland, i. e., to within some 27 leagues (71 miles), or two days' journey, from Bahia Kino and the desert boundary of the Seri stronghold; and although neither fort nor mission was continuously maintained, the event marked a practically permanent advance on the "despoblado" previously despoiled and desolated by the wandering Seri.

Even before this date friction between missionaries and laymen had grown out of the ecclesiastical charity for a people whose repeated atrocities placed them outside the pale of sympathy on the part of the industrial settlers; and this friction was felt especially about the new presidio. In 1749 Colonel Diego Ortiz Parilla became governor of Sonora, and began a rigorous rule over civilians, soldiers, ecclesiastics, and Indians; and when the 80 families (classed as Seri, but mainly of Tepoka and other tribes) domiciled at Populo were dissatisfied with his transfers of land and people, he promptly met their protests by arresting them and transporting the greater part of them, including all the women and children, to various places, "some even in Guatemala and other very distant parts of America."[1] Naturally this was resented, not only by the Seri messmates at the missions, but to some extent by their kinsmen over the plains and along the coast, with whom sporadic communication was maintained—chiefly through spies, but partly by occasional escapes of the practically imprisoned proselytes and the less frequent but more numerous captures of new converts; and the Seri raids became more extended and vindictive, reaching northward to Caborca, northeastward to Santa Ana and Cucurpe, and eastward into the fertile valley of Rio Opodepe at several points. Deeply incensed in his turn, Parilla undertook a war of extermination—a war interesting not merely as an episode in Seri history, but still more as a type of the Seri wars of two centuries. Organizing a force of 500 men, and bringing canoes from Rio Yaqui, he planned an expedition to Tiburon, to cover two months—and returned with 28 prisoners, "all women and children and not a single Seri man"; though he reported killing 10 or 12 warriors in action (according to other accounts the slain comprised only 3 or 4 oldsters). These women and children were domiciled at the pueblo of the Conquest of the Seri, which in current thought thenceforth became the pueblo of the Seri, and gradually passed into lore and later into history as the home of the tribe rather than the mere penitentiary which it was in fact. The padres waxed satirical over this quixotic conquest: Alegre recounts that—

> The good governor returned so vainglorious over his expedition that it was even said he would punish anyone intimating that there was a *Seri left in the world*, and proclaimed through all America and Europe that he had extirpated by the roots that infamous race. . . . The truth is that the force, on reaching Tiburon, ascertained that the enemy had retreated to the mountains; that none of the 75 Spaniards who accompanied the governor could be induced, either by entreaties or

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[1] Rudo Ensayo, p. 194; Bancroft, op. cit., vol. i, p. 533.

> 175 threats, to ascend in search of the Seri; but that some of the Pima allies undertook to beleaguer the mountains, these, with one or another of the officers, being the only ones that saw the face of the enemy, and even these on two occasions only. From the first sally they returned reporting that they had killed 8 of the Seri, and their empty word was accepted; the second time they were so fortunate as to discover a village of women and children, whom they took prisoners, and returned declaring that the men had been left dead on the field. This famous conquest, which the manuscript drawn up by the commander of the expedition did not hesitate to compare with those of Alexander and Cesar, who were as nothing beside the governor of Sonora, intoxicated much more the allied chief of the Pima, who had taken the leading part in the final victory.[1]

Eventually the vanity of this chief (Luis, or "Luys de Sarie") led to a revolt on the part of the Pima tribe with the massacre of Padres Tello and Rohen at Caborca.

Ortega was still more sarcastic in his fuller record of the expedition. The skepticism of the padres as to the completeness of Parilla's extermination was well grounded, as was attested by the continuation of Seri sorties with undiminished frequency and by the persistence of hippophagy at the expense of the stockmen as already noted; moreover, in the absence of records of maritime operations, in view of the impracticability of transporting so large a force as that of Parilla on balsas, and in the light of a still common application of the name Tiburon to Sierra Seri and its environs as well as to the island, it would seem to be an open question whether the much-lauded expedition ever attained the insular stronghold, or even reached the seashore. However this may be, the expedition was the first of a long series sent out to exterminate one of the hardiest and acutest of tribes, wonted to one of the hardest and aridest of habitats; and, save in the subsequent advertising, all have yielded results more or less similar.

Another curtailment of the range of the Seri dates from the refounding of the mission of "San José de Guaimas"[2] (on the site of the present Guaymas) in 1751, and the establishment of a "rancho called Opan Guaimas" some distance up the coast about the same time; the site of the mission being that of a sanctuary located by Kino in 1701, and revisited by Salvatierra and Ugarte, though never continuously maintained. True, the padre and the ranchero suffered from the Seri, who displaced the former, killed eight of his converts, burned the church, and scattered the hundred families of the pueblo, afterward keeping the Spaniards at a distance for ten years;[3] yet the settlers only returned with new vigor, and gradually gained the strength requisite for holding the town. Naturally the belligerency of the Seri in this vicinity impressed the state authorities with the desirability of further "extermination"; and when in 1756 a band of the Seri, after a hypocritical suit for peace, entrenched themselves among the all but inaccessible rocks and barrancas of Cerro Prieto (a rugged sierra midway between Pitic and San José de Guaimas, which for this reason came to be regarded—erroneously—as the headquarters of the tribe), Don Juan Antonio de Mendoza, then governor of Sonora, sent out a strong body of soldiery to dislodge or destroy them; but after 200 of the soldiers were ambushed and 24 of them wounded, the expedition returned to the capital, San Miguel de Horcasitas. Stung by this defeat, Mendoza reorganized his force and led the way in person to Cerro Prieto, where one of the four parties into which the force was divided wrought such execution that, in the following May, there were seen the bodies of enemies "dead and eaten by animals, dead and partly buried in the earth, dead lying in caves, and dead in the water-pockets of the sierra".[1] In this battle Mendoza himself was ambushed and attacked by three Seri archers, escaping only by the mediation of his saint ("por medio de mi santo"); but during the ensuing night he carried out the ingenious ruse of beating drums in different parts of the canyon, which reechoed from the rocky heights with such terrifying effect that the enemy fled, leaving him in victorious possession of the field.

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[1] Historia de la Compañía de Jesus, tomo III, pp. [illegible]; cf. Apostolicos Afanes de la Compañía de Jesus, escritos por un Padre de la misma Sagrada Religion de su Provincia de Mexico; Barcelona, 1754, pp. [illegible].

[2] Rudo Ensayo, p. 229 (misspelled "Guimas").

[3] Bancroft, op. cit., vol. I, p. 554.

Again in 1760, when a band of the Seri (supposed to be temporarily combined with the Pima) took refuge in Cerro Prieto, Governor Mendoza attacked them with over 100 men; but a band of 19 Seri successfully held this force at bay for several hours, until their chief (called El Becerro) fell wounded and dying, yet retaining sufficient vitality to rise, as the Spaniards approached, and transfix Mendoza with an arrow—when the two leaders died together.[2] Mendoza was succeeded by Governor José Tienda de Cuervo, who, in 1761, led a force of 420 men to Cerro Prieto, where a still bloodier battle was fought, the Seri losing 49 killed and 63 captured, besides 322 horses; though the greater part of their force escaped to the island of San Juan Bautista (San Esteban?).[3]

In 1763 Don Juan de Pineda succeeded to the governorship, and obtained the cooperation of a force of national troops under Colonel Domingo Elizondo:

> Headquartering in El Pitiqui, he commenced active war against the said Seris, but was unable to reduce them, because, being separated and dispersed over their vast territory, they wore out the troops, who only occasionally stumbled on one little rancheria or another. For this reason, and because in many years they could not exterminate them, and desiring to leave the country, they opened negotiations with them, making them small presents and offering them royal protection if they would surrender peacefully. Some of them pretended to do this and assembled at Pitiqui, where they remained with the same bad faith as always, fed at the expense of the royal treasury, when the troops retired, leaving the evil uncured, but sorely covered.[4]

In the same year Padre Tomás Ignacio Lizazoin reported, for the x175 information of the viceroy, that the ravages of the Seri and other Indians "had caused the almost total abandonment of Pimeria and Sonora provinces", and proposed plans for protection which were apparently never carried out.[1]

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[1] Documentos para la Historia de Mexico, cuarta série, tomo I, p. [illegible].

[2] Historia de la Compañía de Jesus, tomo III, p. 298.

[3] Ibid., p. 299; Rudo Ensayo, p. 198. It is probable that part or all of the captives were quartered at Pueblo Seri, though the record is silent on this point.

[4] [illegible] de Noticias, op. cit., vol. I, p. 226.

The aggressive and bloody policy of Parilla, Mendoza, and Ocarvo undoubtedly widened the divergence between the civil and ecclesiastical authorities, and brought to naught the pacific policy of the latter. Inspired by fervid zeal, the good padres stretched the mantle of charity to its utmost over their converts, bringing into the fold all whom they could coax or coerce, and clinging unto all whom they could subsidize or suppress. Uninformed or misinformed concerning the extent of Seriland and the numbers and real traits of its inhabitants on their native heath, and professionally prone to see the most favorable side of the situation, they imagined themselves making conquest over a cruel and refractory tribe; yet careful review of the records indicates that they deluded themselves, and in some measure distorted history, through overweening notions concerning their progress in evangelizing the Seri. Actually, their converts were the lame and halt and blind left behind in the harder-pressed raids, captives taken in battle by the intrepid Escalante and other soldiers, apostates and outlaws ostracized and driven off by their fellows, spies sent out to find the way for further rapacity,[2] and the general riffraff and offscouring of the tribe, who esteemed parasitism above the hereditary independence of their kin. This condition is attested by later examples; it is also attested by the rapidly growing divergence of the ecclesiastical and civil policies; it is equally attested by at least partial recognition of the situation on the part of several of the padres: Villa-Señor, writing about 1745, parades the mission and two pueblos of the tribe, and says, "All the Ceris Indians are Christians" ("Todos los Indios Ceris, son Cristianos");[3] yet he adds that "it is rare to find one who does not cling to the idolatry of their paganism", and elsewhere describes the great "despoblado" extending to the coast as inhabited by pagan Seri and Tepoka Indians ("habitado de los Indios Seris, y Tepoca, Gentiles").[4] Venegas, writing about 1750, refers to "the Seris and Tepocas, who are either infidels or imperfectly reduced, and tho' Father Salva Tierra civilized them and the missionaries have baptized many, they still retain such a love for their liberty and customs as all the labours of the missionaries have not been able to obliterate, so that it is impossible to incorporate them with the missions by mildness";[5] and his last word of them notes their massacre of Padres Tello and Ruhen in Caborca, and ends

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[1] Bancroft, op. cit., p. [illegible].

[2] Captain Fernando Sanchez Salvador, in his official Representaciones to the Crown in 1751, complains that these Indians "are allowed on frivolous pretexts to visit the presidios, and they make use of the privilege to discover weak points and to plan attacks" (Bancroft, op. cit., p. [illegible]).

[3] Theatro Americano, segunda parte, p. [illegible].

[4] Ibid., p. [illegible].

[5] History of California, vol. II, p. [illegible].

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with an invocation "for the complete reduction of those unhappy savages, now involved in the shadow of death".[1] So, also, the talented author of "Rudo Ensayo", writing in 1763, says of the Seri:

> They have always been wild, resisting the law of God, even those who had removed from among them to Populo, Nacameri, and Angeles, and who constituted the smallest part of the nation. And even those few, in order to have constant communication with and give information to their heathen relatives, used to go, as if they could not arouse suspicion, to spy out in other villages what they wanted to know for their plans, and immediately giving the intelligence they obtained to the runaway Indians, these would act accordingly and nobody could guess how they acquired the necessary information.[2]

Again, in summarizing the relations with the tribe, this anonymous author naively remarked:

> And at the present day, notwithstanding that in different encounters during the campaign of November, 1761, and before and since then, more than forty men have been killed by our arms and over seventy women and children have been captured, still they are as fierce as ever and will not lend an ear to any word of reconciliation.[3]

[114] In general, the Jesuit history of the Seri is clear enough with respect to the small extruded fraction, but nearly blind to the normal tribe; there is nothing to indicate clear recognition of Seriland as a hereditary habitat and stronghold; yet the records are such as to define the salient episodes in Seri history as seen from a distantly external view-point. Nor can it be forgotten that the erudite evangelists made a deep and indelible impression on the intellectual side of Sonora, and drew the strong historical outline on which their own relations to the civil authorities on the one hand and to the Seri Indians on the other hand are cast by the light of later knowledge.

The discordance between the civil and military authorities and the dominant ecclesiastical order of Sonora sounded to Ciudad Mexico, and eventually echoed to Madrid, and was doubtless one of a series of factors which led to the needlessly harsh expulsion of the scholarly Jesuits in 1767—and hence to a hiatus in the history of the province and its tribes.

[114] Although the padres knew little of the habits and customs of the "wild" Seri save through hearsay, some of their notes are of ethnologic value: Villa-Señor located them on the deserts extending from Pitic and Angeles to Tepopa bay, and added:

> They hold and occupy various rancherias, and subsist by the chase of deer, bura [mule-deer], rabbits, hares, and other animals, and also on the cattle they are able to steal from the Spaniards, and on fish which they harpoon with darts in the sea, and on the roots in which the land abounds.[4]

Villa-Señor distinguished the "Tepocas", whom he combined with the

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[1] Ibid., p. 211. It is improbable that the Seri had anything to do with this particular butchery. According to Coues, the latter padre was killed at Sonoita; and he renders the name "Ruen or Ruhen" (On the Trail of a Spanish Pioneer; the Diary and Itinerary of Francisco Garcés, etc., 1900, vol. I, p. [illegible])

[2] Op. cit., p. [illegible].

[3] Op. cit., pp. [illegible].

[4] Theatro Americano, p. [illegible].

X175 "Guaimas" and "Jupanguaimas". Alegre located the Seri on the coast of the gulf from a few leagues north of the mouth of Rio Yaqui to Bahia San Juan de Bautista (Bahia Kino), adding, "with them may be classed the Guaimas, few in number and of the same language".[1] Writing about the same time, José Gallardo observed: "The distinction is slight between the Seri and Upanguaima, the one and the other having the same idiom" ("Poco es la distincion que hay entre seri y upanguaima, . . . y unos y otros casi hablan un mismo idioma").[2] The author of "Rudo Ensayo" wrote: "The Guaimas speak the same language, with but little difference, as the Seris."[3] He mistook Cerro Prieto as their principal retreat; mentioned the mountains of Bacoatzi Grande, Las Espuelas, and others as other haunts; noted Tiburon and San Juan Bautista (San Esteban ?) islands as less-known shelters, and gave extended attention to "the poison they use for their arrows" as "the most virulent known in these parts"; for "even in cases where the skin only is wounded, the injured part begins to swell, and the swelling extends all over the body to such a size that the flesh bursts and falls to pieces, causing death in twenty-four hours." To test this poison, the Seri "bandage tightly the thigh or arm of one of their robust young men; then make an incision with a flint and let the blood flow away from the wound. When the blood is some distance from the incision, they apply the point of an arrow to it, steeped in the deadly poison. If at the approach of the point of the arrow the blood begins to boil and recedes, the poison is of the right strength, and the man who lends his blood for the experiment brushes it out with his hand to prevent the poison from being introduced into his veins." He was unable "to find out with certainty of what deadly materials the deadly poison is composed. Many a thing is spoken of, such as heads of irritated vipers cut at the very moment of biting into a piece of lung; also half putrefied human flesh and other filth with which I am unwilling to provoke the nausea of the reader." He added the opinion that "the main ingredient is some root."[4] Padre Joseph Och, who, with other German evangels including padres Mittendorf, Pfefferkorn, and Ruen (or Rohen), was [114] stationed in northwestern Sonora shortly before the eviction of the Jesuits, was one of the recorders of aboriginal traits and features, though his record (like that of most of his confrères) is impoverished by his failure to discriminate tribes; but one of his notes is specific:

> As an extraordinary trapping [Zierde] the Seris pierce the nasal septum and hang small colored stones, which swing in front of the mouth, thereto by strings. A few carry, suspended from the nose, little blue-green pebbles, in which they repose great faith. They prize these very highly, and one must give them at least a horse or a cow in exchange for one.[5]

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113 [1] Historia de la Compañia de Jesus, p. 236.

[2] The Works of Hubert Howe Bancroft, vol. III (The Native Races, vol. III), 1882, p. 704.

[3] Op. cit., p. 188.

[4] Ibid., pp. 197, 198.

[5] Nachrichten von verschiedenen Ländern des Spanischen Amerika, aus eigenhändigen Aufsätzen einiger Missionare der Gesellschaft Jesu, herausgegeben von Christoph Gottlieb von Murr, erster Theil: Halle, 1809, p. 253.

It is significant fact, and one attesting the physical and intellectual distance of the padres from the normal Seri, that so few notes of ethnologic value were made during the Jesuits' régime. 114 With a single exception, so far as is known,[1] they recorded not a word of the Seri tongue, not 175x a distinctive custom beyond those evidently of common knowledge, none of the primitive ceremonies and ideas such as attracted their coadjutors in Canada and elsewhere. They made no reference to the alleged cannibalism so conspicuous in later lore; but their silence on this point cannot be regarded as evidential, since they were equally silent concerning nearly all the characteristic customs and traits. The neighboring Papago tribe met the invaders frankly as man to man, displaying a notable combination of receptivity and self-containment which enabled them to assimilate just so much of the Caucasian culture as they deemed desirable, yet to maintain their purity of blood and distinctiveness of culture for centuries; the Seri, on the other hand, met the invaders as enemies, to be first feared, then blinded, baiked, and bled by surreptitious and sinister devices, and finally to be assassinated through ambuscade or remorseless treachery; and it is manifest that they surpassed the gentle padres in shrewdness and strategy, using them as playthings and tools, and carefully concealing their own characters and motives the while.

With the passing of the Jesuits, the publication of Sonoran records received a check from which the province has never completely recovered. 175x True, the place of the order was partly taken by the Colegio Apostólico de Querétaro, which promptly dispatched fourteen Franciscan friars to Sonora, early in 1768, to take possession of the old missions and to found others;[2] it is also true that civil enactments and commissions, as well as military orders and reports, increased with the growth of population; but comparatively few of the events and actions found their way to the press. Seri episodes continued to recur with irregular frequency; according to Dávila, the Seri outbreaks and wars "exceed fifty in number since the conquest of Sonora",[3] and there are decisive indications that the Franciscan régime was not without its due quota of strife. Moreover, the period was one of somewhat exceptionally vigorous pioneering, of the initiation of mining and agriculture, and of conquest over the "despoblado" formerly ranged and inhabited by the Seri. It was during this period that the Seri were permanently dislodged from their outlying haunts and watering-places in Cerro Prieto; and it was during this period, too, that exploration and settlement were extended to Rio Bacuache with such energy as to displace the Seri from their other outlying refuge in the barrancas of this stream. But, as the events and lines of progress multiplied, the burden for the contemporary chronicler

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[1] The Noticia de las Personas que han escrito ó publicado algunas obras sobre Idiomas que se hablan en la República (of Mexico), by Dr José Guadalupe Romero, includes a MS. "Vocabulario de las Lenguas Eudeve, Pima y Seris", written by Padre Adamo Gilg (Bol. Soc. Mex. Geog. y Estad., 1860, tomo VIII, p. 378). [113]

[2] Dávila, Sonora Histórico y Descriptiva, p. 10; Bancroft, op. cit., p. 672.

[3] Ibid., p. 319.

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augmented without corresponding increase in incentive to writing, and it is little wonder that the custom of writing, copying, manifolding, and printing the contemporary records fell into desuetude.

Despite the meagerness of the Franciscan chronicles, the friars of this order are to be credited with making and recording one of the most noteworthy essays toward the subjugation of the Seri—an essay involving the first and last actual attempt to found a Caucasian establishment within Seriland proper. The ecclesiastical corps, sent out from Querétaro college under the presidency of Fray Mariano Antonio de Buena y Alcalde, reached Sonora early in 1768, and were distributed among the missions to which they were respectively assigned before the end of June; and Fray Mariano participated in the efforts to subdue the Seri ensconced in Cerro Prieto. After some months of apparently nominal siege, the hostiles straggled out of their retreat, whereupon "the governor, seeing them assembled and peaceful, besought the friar to instruct and baptize them";[1] the friar promptly acquiesced, with the provision that he should be furnished with the requisite appurtenances of a mission, including not only a church and sacred ornaments, but a house and living for a resident minister. The requirements delayed procedure, but resulted in the appointment of Fray Juan Crisóstomo Gil de Bernabe (already designated by the Querétaro college as Fray Mariano's successor) to take charge of the Seri mission. "The new president, desiring to gratify his proper zeal and the insistence of the governor as to the need of those miserable Indians for the bread of doctrinism", obtained candles and wine from private benefactors, and, despite his inability to find even a hut for shelter, established a sanctuary in the Rancheria de los Seris (Pueblo Seri) on November 17, 1772:

> It was impossible to satisfy the ambition of the missionaries to catechize all the Indians, because, although the whole nation was peaceable, no small portion of them were devoid of desire to hear doctrinism, as many of them had withdrawn to their ancient lurking haunts, principally on Isla Tiburon, whence they came to the Presidio Horcasitas, making false displays to the governor of great fidelity and obedience, petitioning that they should not be taken from the island, but should be given a minister to baptize them the same as those at Pitic; and they did not wish to join these nor to leave the rocky fastness of their libertinage and asylum of their crimes. . . . To conceal their purposes, they petitioned that a town for them should be established on the opposite coast, where they might assemble on leaving the island. Their request was embarrassing because on examination of the coast there was found only a single scanty spring in a carrizal in a playa-like country [toda la tierra como de playa], with little fuel and no timber.

Not unnaturally Fray Crisóstomo hesitated to locate a mission on the practically uninhabitable site, in which, moreover, "the mission would be of no utility because the Indians did not really wish to leave their island and submit to religious instruction, nor could the coast supply the necessary food, as it was a barren sand-waste, so that it would become

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[1] *Crónica Seráfica y Apostólica del Colegio de Propaganda Fide de la Santa Cruz de Querétaro en la Nueva España. . . . escrita por el Padre Fray Juan Domingo Arricivita*, 2ª parte, Mexico, 1792, p. 428.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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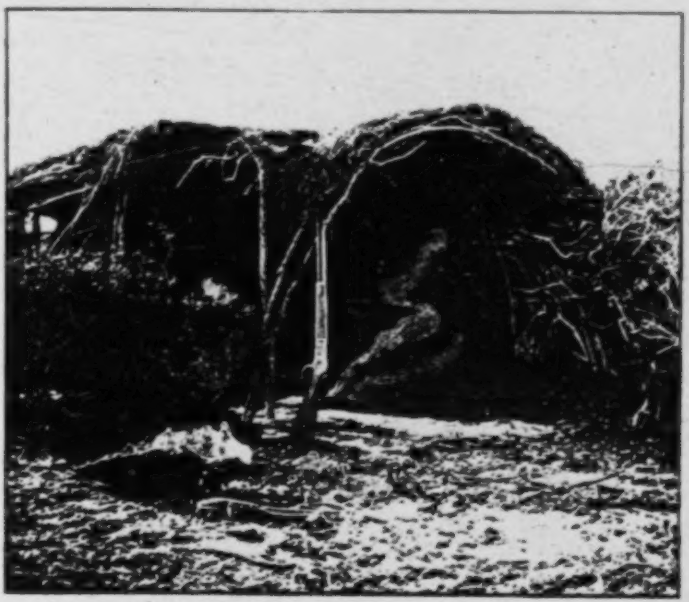
RECENTLY OCCUPIED RANCHERIA, TIBURON ISLAND



TYPICAL HOUSE INTERIOR, TIBURON ISLAND

[p. 80 A]

necessary for the King to constantly supply provisions, else the converts would have a pretext for wandering around and avoiding attention to the catechism." But the governor was obdurate, and only complained to the viceroy and the Queretaro college. Between fires, Fray Crisóstomo yielded, and on November 26, 1772, proceeded to Carrizal and established himself as a minister, without company or escort save a little boy to serve as acolyte. "With the aid of the Indios Tiburones the friar erected a jacal [or hut bower][1] to serve as a church, and a tiny hut as a habitation, and began immediately, with the greatest kindness, to convoke the people for religious instruction, only to see that the desires they had expressed to the governor to become Christians were not deep enough to bring them from their island to attend services—except a few who came and took part in the prayers when they thought fit. But as the congregation at the place was only nominal, and with only three jacales under control, so also was the instruction they sought; and because of both the condition of the land and their wandering instinct, which is in them almost a necessity and more excusable than in other Indians, because neither within their island nor on the coast is the territory fit for cultivation, and still less for the stability essential to civil and political life", the missionary naturally despaired of substantial progress; indeed, "the only fruit for which he could hope, under his mode of living, was reduced either to a child or an adult whom he could, in special circumstances, shrive in extremis." In this disheartening condition the friar spent the winter from near the end of November to March 6, 1773. Then, as appears from an official declaration, there came to him by night an Indian called Yxquisis, with a trumpery tale about a revolt on the part of the Piato and Apache, which led the guileless friar away from the poor shelter of his jacal under the guidance of the Indian. At the inquest Yxquisis confessed, although with many falsehoods ("con muchas mentiras"), that he had stoned the friar, but "without stating any motive for committing such an atrocious crime". Yet even before the story reached Horcasitas two "Indios del Tiburon", supposed to be implicated, were beaten to death with sticks on the spot in which the friar's body was found,[2] and the body was buried by a chief of the tribe. And so ended the mission of Carrizal in the land of the Seri.

Traditions of this Franciscan mission still linger about Hermosillo and at Rancho San Francisco de Costa Rica, and they, like Arricivita's account, indicate that the churchly jacal was planted either hard by Pozo Escalante or at a traditional Ojito Carrizal (Aguaje Parilla, not found in the surveys of 1895), supposed to lie a few miles farther northwestward. All the probabilities point to Pozo Escalante as the site, despite the fact that no cane now grows there; the topographic description applies exactly, while the state of the padre's remains, x175 when exhumed six months later, attests the dry and saline soil in this vicinity. None of these conditions exist about Aguaje Parilla at the southeastern base of Sierra Seri. The present absence of living carrizal at Poso Escalante is of little significance, since the extinction of the plant might easily have been wrought either by the stock of later expeditions or by the rise of the salt-water horizon accompanying the local subsidence of the land; certainly dried roots and much-weathered fragments of cane still remain about the margin of the playa extending southward from the well.

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[1] Doubtless the structures approached the conventional Seri pattern, illustrated in the accompanying plate vi, from photographs taken on Tiburon in 1895.

[2] Arricivita, op. cit., pp. [illegible], [illegible].

The episode culminating in the assassination of Fray Crisóstomo was characteristic: beset at all points and rankling under the invasion of their range, the Seri sought anew to delude the governor with fair words, using their own reprobates and apostates at Pitic and elsewhere to point their asseverations; and remembering the facility with which the earlier ecclesiastics were duped into unwitting allies, they made the kindly and long-suffering friars the immediate object of their petitions. But some of the tribe galled under the lengthy and still lengthening blood-feud too deeply to tolerate the alien presence; and one of these, either alone or supported by the alleged accomplices or others, tried a typical ruse, suggested less by need than inherited habit; for the friar was helpless in their hands, and might have been slain in his jacal as easily as in the open. Typically, too, the assassination initiated or deepened factional dissension and further bloodshed.

[114] The Franciscan records are of even less ethnologic use than those of the Jesuits. Beyond his incidental expressions concerning Seri character and custom in connection with the founding and abandonment of Carrizal, it need only be noted that Arricivita makes hardly a reference to the Tepoka, but habitually combines the "Seris y Piatos"—the latter perhaps representing the "confederate Pima" of "Rudo Ensayo", or the Soba occupying the lower reaches of Rio San Ignacio about that time.

Among the meager and scattered Franciscan records is a letter from Fray Francisco Troncoso, dated September 18, 1824, which is of note as containing an estimate of the Seri population at the time:

> This island [Tiburon] has more than a thousand savage inhabitants, enemies of those of California, and it has frequently occurred that, on balsas of reeds, . . . they have crossed over to invade the mission [of Loreto], killing and robbing some of those they found there.[1]

The record is of value also as indicating that the Seri traversed the gulf freely, and raided settlements and tribes of the peninsula ruthlessly as those of the mainland.

The Carrizal episode was followed by a half century of comparative silence concerning the Seri, though various contemporary records and later compilations indicate customary continuance of the Seri wars.

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[113] [1] Incorporated in Escudero, Noticias Estadísticas de Sonora y Sinaloa; Mexico, 1849, p. 18.

Among the more useful compilations is that of Velasco; and among the more important episodes noted by him was the Cimarrones-Migueletes war of 1780.[1] The Cimarrones included the greater part of the Seri of Tiburon and the Tepoka (then estimated at 2,000 of both sexes),[2] together with the "Pimas called *Piatos*, of the pueblos of Cavorca, Tubutama, Oquitos, etc", and supposedly certain other representatives of the Pima and Apache, who had shortly before marauded Magdalena and sacked Saric, killing a dozen persons;[3] the Migueletes were national troops assigned to Sonora under the command of Colonel Domingo Elizondo. The forces met in several bloody battles in Cerro Prieto, at Jupanguaimas, and at Presidio Viejo; and the former, or at any rate the Seri, were once more "annihilated" ("reducidos a nulidad"). Nevertheless, the hydra-headed tribe retained enough vitality in 1807 to induce Governor Alejo Garcia Conde to send an army of a thousand men to Guaymas, en route to Tiburon, to repeat the extirpation—though the expedition came to naught for international reasons.

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[114]

Among the more useful contemporary records is an unpublished manuscript report by Don José Cortez, dated 1799, found in the Force library, translated by Buckingham Smith, and abstracted by Lieutenant A. W. Whipple for the Report of the Pacific Railway Survey. A subsection of this report is devoted to "the Seris, Tiburones, and Tepocas". It runs:

[114]

> The *Seri* Indians live towards the coast of Sonora, on the famous Cerro Prieto, and in its immediate neighborhood. They are cruel and sanguinary, and at one time formed a numerous band, which committed many excesses in that rich province. With their poisoned shafts they took the lives of many thousand inhabitants, and rendered unavailing the expedition that was set on foot against them from Mexico. At this time they are reduced to a small number; have, on many occasions, been successfully encountered by our troops; and are kept within bounds by the vigilance of the three posts (*presidios*) established for the purpose. None of their customs approach, at all, to those of civilization; and their notions of religion and marriage exist under barbarous forms, such as have before been described in treating of the most savage nations. The *Tiburos* and *Tepoca* Indians are a more numerous tribe, and worthy of greater consideration than the Seris, but their bloodthirsty disposition and their customs are the same. They ordinarily live on the island of Tiburon, which is connected with the coast of Sonora by a narrow inundated isthmus, over which they pass by swimming when the tide is up, and when it is down, by wading, as the water then only reaches to the waist, or not so high. They come onto the continent, over which they make their incursions, and, after the commission of robberies, they return to the island; on which account no punishment usually follows their temerity. It is now twenty-three or twenty-four years since the plan was approved by His Majesty, and ordered to be carried out, of destroying them on their island; but, until the present season, no movement has been made to

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[1] Noticias Estadísticas del Estado de Sonora; Mexico, 1850, p. 124 et seq. [113]

[2] Ibid., p. 132.

[3] Bancroft, op. cit., vol. II, p. [illegible]. It is incredible that such a confederation of so incongruous elements could ever have been effected; it is incomparably more probable that there was a succession of outbreaks of the Seri, Piato, and Apache, each stimulated by the removal of soldiers for defense against the other enemies, just as Seri outrages follow Yaqui outbreaks today; but it was undoubtedly a custom of the times (a custom still existing) to connect the several enemies in current thought and speech. [114]

> X175 put it into execution. To this end the troops of Sonora are being equipped; a corvette of the department of San Blas aids in the expedition and two or three vessels of troops from the companies stationed at the port of that name on the South sea.[1]

[114] The record is significant as voicing an ill-founded discrimination of the wandering Seri from the inhabitants of Tiburon, as echoing persistent conception of Tiburon as a peninsula, and as summarizing the characteristics of the tribe recognized at the end of the last century.

Meantime population and industries increased, while civil and military development pursued its course; the Presidio of Pitic expanded into a pueblo, and later into the city which gradually adopted the cognomen of General José Maria Gonzalez Hermosillo, a hero of Sonora in the stirring times of 1810-1812; Pueblo Seri became Mexicanized, retaining only a few Seri families in 1811, according to Manuel Cabrera;[2] Guaymas grew into a port of some commercial note; pearl fishing progressed along the coast and prospecting in the interior; despite constant harrying by Seri raids, the rancho of Bacuachito (probably the Bacoachizo of Escudero[3]) became a flourishing pueblo; and plans for ports in the northern gulf were broached and even tested. Moreover, the dawn of the nineteenth century stirred scientific interest in the native tribes, including the obstinate owners of Tiburon—an interest stimulated by Humboldt's American journeys of 1803.

Combining earlier cartography (originating with Kino) and persist-
114 ent tradition up to the beginning of the nineteenth century, Humboldt mapped "Isla de Tiburon" nearly a degree too far northward, and
X175 separated from the mainland by a greatly exaggerated strait. The land portion of the map is strikingly defective, revealing in numerous imaginary mesas the author's penchant for Mexican plateaus, while "Rio Hiaqui" ("de Yaqui ou de Sonora" in the text) is combined with Rio Sonora and given an intermediate position, and "Rio de la Ascencion" (Rio San Ignacio) is represented as passing through an estuary into the gulf just off the northern end of Tiburon; the "Indicos Seris" being located on a figmentary mesa north of the latter river and due west of Caborca, Pitic (apparently a composite of San Diego de Pitic, or modern Pitiquito, with San Pedro de Pitic, or modern Hermosillo), and Altar.[4] His text corresponds:

> X175 On the right bank of Rio de la Ascencion live some very bellicose Indians, the Seris, to whom many Mexican savants ascribe an Asiatic origin by reason of the analogy offered by their name with that of the Seri located by the ancient geographers at the base of the Ottorocorras mountains.[5]

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113 [1] Reports of Explorations and Surveys to ascertain the most practicable and economical Route for a Railroad from the Mississippi River to the Pacific Ocean, vol. III, part 3: Report upon the Indian Tribes, 1856, pp. 122-123. The original Cortes manuscript is now in the Library of Congress.

[2] In Velasco, op. cit., p. 137.

[3] Noticias Estadísticas de Sonora y Sinaloa, Compiladas y Amplificadas para la Comision de Estadística Militar, por el Lic. D. José Agustin de Escudero; Mexico, 1849, p. 93.

[4] Atlas Géographique et Physique du Royaume de la Nouvelle-Espagne, par Al. de Humboldt; Paris, 1811, carte générale.

[5] Voyage de Humboldt et Bonpland, troisième partie: Essai Politique sur le Royaume de la Nouvelle-Espagne, tome i; Paris, 1811, pp. 286-287.

Naturally most of the scientific inquiries of the time were, like those of Humboldt, based on tradition rather than on direct observation. 175x [114]

Toward the end of the first third of the century an important contribution to actual knowledge of Seriland and the Seri at last grew out of the pearl industry. In May, 1825, Lieutenant R. W. H. Hardy, R. N., was commissioned by the "General Pearl and Coral Fishery Association of London" to investigate the pearl fisheries of the Californian gulf; and his task was performed with promptness and energy. On February 13, 1826, he visited Pitic (under Hermosillo):

> Half a league short [south] of it is another small place, called the Pueblo de los Céros, inhabited by a squalid race of Indians who are said to indulge in constant habits of intemperance and to have lost the fire of the warrior. In its stead they manifest the sullen stupidity peculiar to those who, feeling themselves unfitted for companionship, strive to vent their pusillanimous rage upon objects the most helpless and unoffending, such as women, children, and dogs, who appear to be the chief victims of their revenge.[1]

His chief object in visiting Pitic was to obtain information concerning Tiburon, its natives, and its pearl-oyster beds; and he was rewarded with characteristic accounts of the ferocity of the tribesmen and their use of poisoned arrows, which he received with some incredulity.[2]

After examining the principal pearl fisheries of the western coast, Lieutenant Hardy reached the "Sal si Puedes" in the throat of the gulf, and, on August 9, "got aslant of wind, which carried us up to the northwest end of Tiburon island"[3]—i. e., apparently over the precise route sailed by Padre Ugarte in 1721. Anchoring on the island, he had the good fortune first to meet a native able to speak Spanish, and later to successfully treat the sick wife of the principal chief, after which he was treated with great consideration, and—unwittingly on his part—adopted into the tribe as a member of the chief clan by the ceremony of face painting, the symbol being that of the turtle totem, to judge from the superficial description. Taking slightly brackish water, just as Ugarte had done one hundred and five years before, and arming his crew, he spent the night near the rancheria (evidently in Bahia Agua Dulce). Next morning he "traveled over the greater part of the island" (!) in fruitless search for pearls and gold, and in the afternoon "got under weigh, and stood into a bay of the continent to the northeast of the island," discovering and naming "Sargent's Point", together with "Cockle Harbour", and "Bruja's bay" in the lee of the point, and also "Arnold's Island"; this island being apparently the present prominent cuspof Punta Sargent, now connected with the mainland by a continuous wave-built bar rising a little way above reach of tide. Anchoring in the bay named from his vessel (*La Bruja*), he examined the adjacent shore, ascertaining that "there is no fresh water near the spot, except x175 during the rainy season, which only lasts about a month or six weeks", nor "any vestige of Indians to be seen except a solitary hut erected by the Tiburons to serve them when they go there to fish"; and, noting the report that Padre Kino had visited this point, he quite appositely questioned the truth of the tradition, partly on the ground of the absence of fresh water, partly because "the Tepoca Indian establishment" mentioned in the tradition "is many leagues farther to the northward." Awakened by an approaching storm, he was under way next morning at daylight, and, getting out of the "bad holding ground", was caught by a gale and carried back to his "old anchorage in Freshwater Bay", where he found the Indians rejoicing over the success of a ceremonial incantation to which they ascribed his return. The reconnaissance map [114] is ill-drawn, locating "Fresh Water B." on the mainland side and apparently combining "Sargent's Point" and "Arnold's Island" as "Sargents I."; "San Miguel Pt." is properly located, and idealized route lines traverse the "Canal peligroso de San Miguel" (El Infiernillo), which is of greatly exaggerated width. The careful itinerary shows, however, that Hardy scarcely entered this strait, and made but three or four anchorages in the vicinity—i. e., in Bahia Agua Dulce, in Bahia Bruja, probably in Cockle harbor (or "Cochla Inlet"), and finally off Isla Patos.

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[1] Travels in the Interior of Mexico in 1825, 1826, 1827, and 1828; London, 1829, p. 96.

[2] Ibid., p. 167.

[3] Ibid., p. 280.

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Hardy's notes on the Indians are first hand, and hence of exceptional [114] value. He says:

> The Indians on the island of Tiburon are very stout, tall, and well-built fellows, 105 x175 exceedingly like the Twalchii tribe of Indians in Patagonia, and with a language so like theirs that I imagined I was transported back into those wild regions. They by no means look so ferocious as they are represented, and there is something peculiarly mild in the countenances of the females. Their dress is a sort of blanket, extending from the hips to the knees. But most of the old women have this part of the body covered with the skins of the eagle, having the feathers turned *towards the flesh*. The upper part of the body is entirely exposed, and their hair is dressed on the top of the head in a knot which greatly sets off the effect of their painted faces. The men use bows and stone-pointed arrows; but whether they are poisoned I do not know. They use likewise a sort of wooden mallet called Macana, for close quarters in war. They have a curious weapon which they employ for catching fish. It is a spear with a double point, forming an angle of about 5 degrees. The insides of these two points, which are 6 inches long, are jagged; so that when the body of a fish is forced between them it can not get away on account of the teeth.[1]

He saw "about fifteen or twenty canoes made of three long bamboo bundles fastened together", and observed that, when engaged in turtle fishing, the Indian "paddles himself from the shore on one of these by means of a long elastic pole of about 12 or 14 feet in length, the wood of which is the root of a thorn called mosquito, growing near the coast", this pole serving also as a harpoon shaft, provided with a harpoon head and cord, such as those still in use. Respecting the invocatory appurtenances, he says:

> My attention was directed by the old women to a pile of bushes outside the hut, which had a staff of about 5 feet in length sticking up through the center. From

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[1] Op. cit., p. 289-290.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

the upper end of the staff was suspended by a cord 12 or 14 inches long a round stone ball, and to this ball was fastened another string furnished with bits of cork, surrounded with small feathers stuck into them at the distance of about 3 inches apart: the only use of the stone ball being to prevent the wind from blowing out horizontally the string which was furnished with feathers. . . . Upon examining the bushy pile, I discovered a wooden figure with a *carved hat*, and others of different shapes and sizes, as well also as leathern bags, the contents of which I was not permitted to explore.[1] 105 175 P

He also mentions that "in their festivities the Indians wear the head (with the horns on)" of the bura or male deer. He adds:

> It is believed that the Céres Indians have discovered a method of poisoning their arrows, and that they do it in this way: They kill a cow and take from it its liver. They then collect a number of rattlesnakes, scorpions, centipedes, and tarantulas, which they confine in a hole with the liver. The next process is to beat them with sticks in order to enrage them, and being thus infuriated, they fasten their fangs and exhaust their venom upon each other and upon the liver. When the whole mass is in a high state of corruption the old women take the arrows and pass their points through it. They are then allowed to dry in the shade, and it is said that a wound inflicted by them will prove fatal. Others again say that the poison is obtained from the juice of the yerba de la flécha (arrow wort).[2]

He purchased some of the arrows, which were stone-tipped, and had "certainly had an unguent applied to them".

He was impressed by indications of family affection, and noted the custom of having two wives. Concerning tribal relations he says:

> These people have been always considered extremely ferocious, and there is little doubt, from their brave and warlike character, that they may formerly have devastated a great part of the country; but in modern days their feuds are nearly confined to a neighboring tribe of the same name as themselves (Céres), who speak the same language and in all probability originally descended from the same stock. They are said to be inferior to those of this island both in courage and stature, and they are never suffered to cross the channel. From what I was told * * * the Tiburow Céres have lately returned from a sanguinary war with the Tépoca Céres, in which the former were victorious.[3]

Later in his itinerary Hardy noted a typical Yaqui revolution, with a characteristic effort to secure the cooperation of the Seri.[4] He defined the Seri habitat as "the island of Tiburow, the coast of Tépoca, and the pueblo of Los Céres, near Pitic";[5] and he estimated the population at "3,000 or 4,000 at the very utmost",[6] and quoted the estimate of Don José Maria Retio, viz, that the Seri population of Tiburon was 1,000 to 1,500.[7] 175 X [161]

Like most of those visitors to the Seri who have returned to tell their tale, Hardy "praised the bridge that carried him over" and gave the tribe passable character—worse, of course, than that of any other, yet hardly so bad as painted at Pitic.

A noteworthy traveler in western America during 1840-1842 was M. Duflot de Mofras, an attache of the French legation in Mexico. He

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[1] Op. cit., pp. [illegible].
[2] Ibid., pp. [illegible].
[3] Ibid., pp. [illegible].
[4] Ibid., p. [illegible] et seq.
[5] Ibid., p. 437.
[6] Ibid., p. [illegible].
[7] Ibid., pp. 233, 240.

X175 traversed the Californias and entered Sonora, and while he failed to see Seriland, he made a note on the tribe, valuable as a current estimate of the population:

> At the gates of the city of Hermosillo is established a Mission which contains 500 Seri Indians; 1,000 of them inhabit the coast to the north of Guaymas and Île de Raquia (Isla del Tiburon).[1]

The next noteworthy espisode in the external history of the Seri chronicled in the civil records of Sonora culminated in 1844. "The above-named Seris, although their number never became important, did not abandon their propensity to revolt, and, while they never rose en masse, made many factional uprisings. Ultimately . . . they displayed such boldness, robbing ranchos, assassinating all they encountered, assaulting on the roads arrieros and other travelers", that a considerable force was sent against them from Hermosillo under the direction of Captain Victor Araiza. It was planned to support this land force by a sea party from Guaymas, but delays and misunderstandings caused the practical abandonment of the plan. Tiring of the delay, Araiza "declared war on the Indians, surprising them on Punta del Carrizal, killing 11, including several innocent women and children", and taking 4 captives of from 1 to 11 years in age; whereupon the army returned to Hermosillo.[2]

Disapproving of this undignified and inhuman crusade, the acting governor, General Francisco Ponce de Leon, planned a still more vigorous campaign by land and sea for the purpose of capturing the entire tribe and transporting them to Pueblo Seri, where a few of their kin were still harbored.[3] The command was intrusted to Colonel Francisco Andrade, who took personal charge of the land force, including 160 infantry from Guaymas, 60 infantry and 30 cavalry from Hermosillo, and considerable corps from Horcasitas and Altar. The naval auxiliary, in charge of Don Tomás Espence,[4] pilot, comprised a schooner of 12 tons; two launches, one carrying a 4-pound cannon and the other a 2-pound falconet; and one rowboat. On August 11, 1844, Espence sailed from Guaymas, and six days later cast anchor at the embarcadero (apparently a convenient place on the coast of Bahia Kino due west of Pozo Escalante—the Embarcadero Andrade of figure 1) opposite Tiburon. Andrade marched from Hermosillo August 13,

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113 [1] Exploration du Territoire de l'Orégon, des Californies et de la Mer Vermeille, exécutée pendant les années 1840, 1841 et 1842, tome I; Paris, 1844, p. 214.

[114] [2] Velasco, Noticias Estadísticas, pp. 124, 125. This chronicle is rendered peculiarly valuable by supplements in the form of Andrade's and Espence's journals, the latter incorporated (p. 125) after Velasco's own writing was completed. The whole was revised, extended, and republished in the several volumes of the first series of Bol. Soc. Mex. Geog. y Estad., 1861–1866.

[3] On August 14, 1844, Secretary Manuel Cabrera reported that "there are in this pueblo not more than fifteen families of Seris located within its borders, maintaining themselves by the manufacture of earthen ollas and by the garbage of their neighbors, i. e., in time of harvest they glean the wheat and corn left scattered, and the bones, entrails, and hoofs of the stock slaughtered for consumption by the inhabitants." (Incorporated in Velasco, op. cit., p. 128.)

[4] Thomas Spence, of Guaymas; apparently the "Mr. Spence" mentioned favorably by Hardy (Travels, p. 98).

reached Carrizal August 16, and had detachments at the coast to meet the squadron the next day. Both the vessels and this detachment were out of water, and next morning Espence, taking a few soldiers and an Indian guide, made his way to Tiburon in search of springs; but "on arriving it turned out that the Indian had deceived the party or did not wish to reveal the water." Nevertheless they landed, and Espence hoisted the Mexican flag, "taking possession of the island in the name of the Mexican Government, as the first civilized person to touch the soil." Afterward he divided his force, and he and the sailors wandered far, spending the entire day in vain search for water. Toward evening he "made the men wade into the sea up to their necks, and in this manner mitigated somewhat their burning thirst." Meantime the soldiers had traveled inland some 6 or 8 miles, and found water at the head of an arroyo (apparently a temporary tinaja west of Punta Narragansett), but it was surrounded by Indians, who at once gave battle. Such was their thirst that the soldiers held their ground, drinking one at a time under the protection of their comrades. At length they killed two chiefs (one of whom wore a jacket taken from one Hijar, robbed on the Cienega road a few days before), and succeeded in withdrawing to a small eminence and sheltering themselves behind a rock. Later they effected a retreat without loss, and of course without water, so that they arrived at the shore even thirstier than the sailors. Making their way back to the mainland during the night, the party were relieved the following day by mule-loads of water sent over from Carrizal. On August 20 Colonel Andrade marched to the coast with most of his force, leaving a detachment to guard the route; and the next day Espence transported to the island 125 troops, 16 horses, and some mules and cattle, without other accident than the drowning of a mule and a steer "by the strength of the current". Suffering much from thirst, the troops pressed inland to the watering-place already discovered, where they camped. The next day Colonel Andrade, with Lieutenant Jesus Garcia, worked northward, finding another watering-place (doubtless Tinaja Anita) 3½ leagues distant from the first; and this was made headquarters for the force. Several parties were sent out in search of water and Indians. A few watering-places were found, and a number of women and children with a few men were captured, though the journals indicate that the excursions were of limited extent only. Meantime Espence brought over the baggage and provisions; and on August 24, leaving a launch and a rowboat for the use of the troops, he sailed northward through the strait, and three days later, after passing many bars of sand, entered the bay at the extreme north (Bahia Agua Dulce), opposite Punta Tepopa, finding sharks swarming in thousands. Here he found fresh water 250 paces from the beach—the water which sustained Hardy eighteen years before, and Ugarte over a century earlier still. He found no Indians here, but a number of jacales and balsas (which he x175 immediately burned), as well as bones and other remains of horses.[1] On August 28 and 29 Espence skirted the abrupt and rocky coasts of Tiburon, west and south of the northern bay, without seeing trace of natives; on the 30th he reached the western bay, where he found huts and fresh tracks, and captured a woman disabled by snake-bite. Farther down the bay he encountered a considerable party, who first prepared to attack, and then, overawed by his bold front, sued for peace; whereupon he accepted their submission, and sent them with a letter to Colonel Andrade. This affair concluded, and escaping currents so contrary that he was nearly locoed ("por las corrientes encontradas que me volvian loco"),[2] he coasted southward; and on September 1, at the southwestern point of the island, he found another rancheria, and made peaceful conquest of the occupants, whom he also sent with a letter to Andrade. Thence he coasted eastward, and, on September 3, returned to his starting point, "having navigated the island in the period of nine days, having in this time burned 64 huts and 97 balsas, and reduced to peace 104 Indians with their families." The next day he transported the captives to the mainland, "their number, comprising men, women, and children, reaching 384, besides about 37 remaining at large on the island."[3] On September 5 the remaining troops were transferred to the mainland, with the exception of a small detachment, which remained for an unspecified, but evidently short period, in the vain hope of corraling the warriors, with the families to which they belonged, supposed (on grounds not given) to remain on the island. The troops and their captives immediately moved to Laguna de los Cerceditos (probably Laguna la Cruz) to rejoin the cavalry guard; thence, suffering much from thirst, they marched toward Hermosillo, arriving at that place September 12,[4] where the troops and captives formed a triumphal procession, met on the highroad by the merchants and the civil and military authorities, and greeted by the ringing of bells and the firing of rockets, and with music and refreshments.

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[1] The expressions of the journal indicate that Espence was not familiar with the Seri custom of eviscerating and quartering stolen stock, consuming the entrails at once, and transporting the more substantial pieces across the strait on their balsas. Velasco fell into still further error in assuming that the expressions relate to tracks and other indications of the presence of living stock on the island.

[2] Velasco, op. cit., p. 168.

[3] Ibid., p. 169. On the same page Espence classifies the captives as 6 oldsters ("viejos de sesenta años arriba"), 12 holdances ("viejos de cuarenta arriba"), 1 blind, 1 idiotic boy, 5 cripples male, 1 cripple female, 180 women, 160 children, and 144 men—510 in all. Andrade's report enumerates the captives as 120 in each of two lots, with 20 or more in a third, making 260 odd (ibid., p. 180); while Velasco put the number at 200 and odd ("doscientas y tantas personas"), men, women, and children, including only 30 odd oldsters and warriors combined. The discrepancies are characteristic, and of a piece with those prevailing in the same latitude and longitude today: e. g., Velasco says there are but four waters on the island, Espence says there are eight or ten, and Andrade implies that there are many; Velasco says there were 100 troops from Guaymas, while Andrade mentions only 80; Espence says that in transporting the stock (as noted above) but one mule was drowned by the strength of the current, while Andrade says that a mule and a steer were lost on account of the bad storm which prevailed during the day; yet there is such agreement between dates and facts in the independent journals of Andrade and Espence as to establish general verity despite the provincial weakness concerning details.

[4] According to Andrade (ibid., p. 182); Velasco says September 16 (ibid., p. 128).

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The captives were imprisoned over night in the mint, the children weeping, the women chattering angrily or humbly, and the men sulking. 175 Next day the Hermosilleños began distributing the children among themselves, some families taking three and many two, while the adults were transferred to Pueblo Seri, placed in charge of a single keeper, and set to gathering fuel, etc. Naturally this unstable status did not long persist; "within two months they began to disappear, fleeing to their respective and native haunts, stealing and carrying with them the children from whom they had been separated";[1] and, according to Espence, they committed "many murders on the Pitic and Guaimas roads" as they returned to Tiburon.[2]

While the Tiburon captives were escaping, the campaigning continued; and, in November, 1844, several Seri families, comprising 63 men, women, and children, who had been scavengering Rancho del Burro ("manteniéndose allí á merced de los desperdicios de dicho rancho"),[3] were captured and transported to the mint at Hermosillo, and soon afterward transferred to Pueblo Seri. During the same month a report came from Rancho del Pocito, on the Guaymas road, that Seri marauders (assumed to belong to the 16 families left on the island) had killed 10 head of stock; and a detachment of 15 cavalry was sent to inflict punishment. Early in December this party met a Seri force of over seventy warriors, including some of those captured on Tiburon and escaped from Pueblo Seri; after a battle of four hours the troops found their ammunition exhausted, several of their carbines out of order, and all but four or five of their horses winded; so that they were driven to parley with the Indians and to procure their surrender by pacific means—especially promises of good treatment.[4] Subsequently a municipal commission from Hermosillo reminded the defeated Seri of their surrender, and "three, four, or eight" of them presented themselves ("presentándose tres, cuatro ú ocho hombres"), and were probably added to the colony at Pueblo Seri.

Espence's journal clearly indicates a complete circumnavigation of Tiburon, the second in history (that of Ugarte in 1721 being the first); and naturally some of his notes are of ethnologic value:

> The Ceris Indians are tall, well formed, not very corpulent; the women are 105
> remarkable for small breasts and feet and high insteps. At night they travel ill; 175X
> this is to be attributed to the reflection of the sun on the sand, which is quite white, and as they all live on the shore where they gain sustenance, which is fish and plankton [marisco], they are daily exposed to a glare which injures their vision. Their favorite food is turtles and horses. . . . They are all in the most savage condition it is possible to conceive. Their language is guttural, and they are most filthy in their persons, as in their food, which is mostly eaten raw, or at the best half

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[1] Velasco, Noticias Estadisticas, p. 127.

[2] Ibid., p. 170.

[3] Ibid., p. 128.

[4] Ibid., p. 129. This naive recital is far from unique among the chronicles of conquest over the Seri. All of the records recount victories more or less brilliant, even when there are strong indications between lines that the Caucasians were outnumbered, outfought, forced from the field, and even driven into the protection of the pueblos. The Seri side of the story has never been told.

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+175 smoked; they endure a thousand miseries on the island, yet the love they have for it is incredible. They are always accompanied by innumerable dogs, . . . which they have domesticated.[1]

Velasco adds:

> The Ceris subsist on fish, the seeds of grass, and countwise shrubs, as well as on the flesh of horses and deer, which they kill. There is no better proof of this fact than this—on approaching the said Ceris, one instantly perceives that their bodies exhale an intolerable stench, like that of a corpse of eight or more days, totally rotten, so that it is necessary to withdraw far as possible from them.[2]
>
> Of all the Indian tribes known in Sonora, none are more barbarous and uncivilized than the Ceris. They are perverse to the limit, vicious beyond compare in drunkenness, infinitely filthy, the bitterest enemies of the whites, like the worst of the Indians.[3]

He adds also that the men wear a pelican-skin robe and a breechclout of cotton cloth, with most of the body uncovered; "they have their faces painted or barred with prominent black lines. They use no foot-gear of any kind, and many have the nasal septum pierced and adorned with pieces of greenstone or ordinary glass." "They are robust in stature, tall and straight, generally with bright black eyes. The women are not uncomely, and of bronzy color [de color abronzado]. Their clothing is made of pelican skins fastened together, retaining the feathers; with this they are covered from the waist downward", the remainder of the body being bare. The women of Hermosillo provide them with cast off garments when they approach the city, and these they wear, unwashed, until they fall to pieces. "The said tribe, in addition to being the vilest and most brutal known in the country, are preeminently treacherous and traitorous, so that forty of their outbreaks may be counted during the efforts to reduce them to civilized life." At the time of the Cimarrones outbreak, the Seri of Tiburon and Tepoka numbered 2,000; [161] "to day [about 1846 or 1847], counting the 250, which are all that inhabit Tiburon and the most that can be presented, including the Tepoka Seri [los Ceris Tepocas], who have always been much fewer, their whole number will not amount to 500 persons of all sexes and ages, and the warriors can not exceed 60 or 80 at the most." The Seri are not polygamous, though apparently promiscuous ("se nota en sus matrimonios mucha tolerancia mútamente"). They "adore the moon, which they venerate and respect as a deity; when they see the new moon, they kneel and make obeisance; they kiss the earth and make a thousand genuflections, beating their breasts."[4]

+175 The remarkably vigorous expedition of Andrade and Espence occurred within the memory of men still active, and naturally it lives in tradition at Hermosillo and Bacuache, and among the ranchos lying toward the border of Seriland; indeed, one of the two Mexicans accompanying the 1895 expedition, Don Ygnacio Lozania, retained shadowy impressions of participating in an invasion of the island, which could have been none other than that planned by Governor De

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[1] Velasco, Noticias Estadisticas, pp. 169-171.

[2] Ibid., p. 126.

[3] Ibid., pp. 127-128.

[4] Ibid., pp. 131-133.

Leon and executed by Colonel Andrade. Yet it is not uncharacteristic of Sonoran history that the wave of anti-Seri activity culminating in 1844 hardly outlasted its own breaking; certainly Escudero, writing less than five years later, declared of "la nacion *Seri*": "During thirty-three years they have committed not a single act of hostility and live in peace and perfect harmony with the Sonorenses." He added that they occupied the islands of Tiburon and Tepoca (*sic*) and the coasts of the gulf contiguous to Sonora and California, and from the most remote antiquity had been known by the names of "*tiburones*" or "*serie*". Describing Pueblo Seri, he observed: "It now contains hardly a dozen aged Seris of both sexes"; and he forecast the early extinction of the tribe, since the people were incapable of abandoning their independent and solitary existence.[1] 175

Here ends, practically, the history of Pueblo Seri as a Seri settlement, for, although one of the tribe survived for half a century and a few others may have survived for a decade, the "aged Seris of both sexes" melted away so rapidly as to leave no later record, and were apparently never replaced by others. Briefly, the history of the pueblo began with the establishment of a presidio or military post in 1741 in the natural gateway and watering-place leading into the settled valleys of the Opodepe and upper Sonora, for the sole purpose of protecting the settlements against the wandering Seri, who used this typical Sonora watergap as a way-station on forays but never as a place of residence. The history grew definite when the Jesuits obtained the allotment of lands for the Seri and established for them a mission, which was at the same time a place of catechizing for Seri neophytes, a place of detention for Seri captives, a place of refuge for Seri weaklings, and a place of resort for Seri sneaks and spies. The history proceeded with many vicissitudes, as the presidio was alternately abandoned under Seri attacks and reoccupied when the attacks were repulsed, and as the neophytes alternately escaped and suffered recapture; the formal history waned in relative importance as the population and interests of Pitic and afterward of Hermosillo waxed, and as the lands originally allotted to the Seri were gradually taken and held by Mexican settlers, and ended when the Seri tenure was formally extinguished in 1844, as described by Cabrera and Velasco; and the general history dropped into unimportance with the escape of Andrade's captives, after temporary quartering on the legally established landholders and householders of the Mexicanized pueblo. For a century and a half the name of the pueblo has continually raised and renewed the assumption that it marks a site of aboriginal Seri habitation or has played some other leading rôle in Seri history, and this assumption has shaped opinion past and present; yet its error is clearly shown by scrutiny of the historical records, as well as by collateral ethnologic and archeologic evidence. [114]

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[1] Noticias Estadisticas, pp. 141-142.

114 +175 Here may be said to end, too, the local chronicles of the Seri; for although the state archives are crowded with charges, petitions, commissions, reports, and other papers pertaining to the irrepressible Seri; although these materials have overflowed to Ciudad, Mexico, and even to Washington, in official documents both numerous and voluminous; although Dávila in 1894 increased Velasco's forty Seri wars to fifty; and although the weightiest events in the internal history of the Seri have occurred since 1844, little attempt has latterly been made to reduce the abundant data to print.

The Mexican geographic knowledge of the time was surprisingly vague, as is shown by the current maps, for example, the Tanner maps which appeared in several editions: the 1846 edition recalls and evidently reflects the Humboldt map of the beginning of the century; "R. Ascencion" is represented as embouching through an estuary about 30° 20′, with the "Seris Indians" north of its lower half-length and west of "Pitic" and "Ft. del Alter"; Ures is located 3 or 4 miles southeast of this fort, and "Racuach" (the Bacuachito of the present) is 20 miles farther southeastward. Neither Rio Sonora nor any of its important branches are indicated, while "Pitic" is placed several times too far from the coast and from Guaymas, in a featureless expanse of paper; "Rio Hiaqui" is shown as a branchless and conventional stream of a single crescentic curvature, embouching in about the right latitude. The coast of the gulf is distorted, and "Tiburon" is shown as an island much too large and nearly a degree too far north, separated from the mainland by a greatly exaggerated strait, with an elongated mesa ("Mt. del Picu") skirting the mainland coast—in short, the cartography is largely traditional if not fanciful.[1]

The career of the Seri during the half century 1844–1894 is traceable by aid of (1) unpublished documents, (2) published results of scientific inquiries and surveys, and (3) personal reminiscences of men living on the Seri frontier; but in a summary touching only salient points the first-named source may be passed over.

One of the first foreign visitors to follow Baron Humboldt in systematic inquiries concerning the aborigines of northwestern Mexico was Henri Ternaux-Compans; his information, too, was secondhand and remote, yet he correctly recognized Isla Tiburon as "inhabited by the Seris, who have some huts also on the mainland".[2]

Later came Eduard Mühlenpfordt, an attaché of a German commercial company and later a Mexican state official, who traveled extensively and wrote partly at first hand, though there is little indication of personal acquaintance with Seriland or the Seri: he described "Bahia de San

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[113] [1] A Map of the United States of Mexico, as organized and defined by the several Acts of the Congress of that Republic, constructed from a great variety of Printed and Manuscript Documents, by H. S. Tanner. Third edition, 1846. The map in De Mofras (op. cit., atlas) is little better.

[2] Nouvelles Annales des Voyages, tome III, 1842, p. 839 (cited by Buschmann, Die Spuren der aztekischen Sprache im nördlichen Mexico und höheren amerikanischen Norden, in Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin, aus dem Jahre 1854, zweiter Supplement-Band; Berlin, 1859, p. 259).

Juan Bautista", with "the small island San Augustin" lying before it 114
(in such manner as to identify this islet with Isla Tassne), and located
"the large island Tiburon farther northward, opposite a mountainous 175X
coast".[1] He added:

> The waterless but cattle-stocked plains between the place Pitic and the coast, and thence up to the river Asuncion, are inhabited by a meager remnant of the Seri tribe, while on Tiburon island, opposite this coast, the Tiburones dwell. The Seris were formerly very numerous, by far the fiercest of all the Indian tribes of northern Mexico, and very warlike. Through ceaseless war with the Tiburones and the troops from the Spanish presidios they are now nearly extinct.[2]

Elsewhere the Tiburones were characterized as enemies of the Seri,[3] while the "Heris" tribe was enumerated as a branch of the "Pimas Bajas" people. Herr Mühlenpfordt's characterization of the Seri and the Tiburon islanders as enemies would appear to be groundless, yet not wholly incomprehensible; in the first place, the earlier literature indicates that the term Seri (Seris, Ceris, Heris, etc.) was an alien designation of lax application,[4] doubtless extended occasionally or habitually to marauding nomads, regardless of affinity; again there is conclusive evidence that in many instances Seri convert-captives attached to the missions and pueblos were often regarded as tribal apostates and outlaws whose lives were forfeit; and, moreover, the region in which Herr Mühlenpfordt gained his information was and still is one of abounding tale, whose frequent exaggeration and not infrequent invention conceal and distort the simple facts.

In 1850, Don Diego Lavandera transmitted to the Mexican Society of Geography and Statistics, through the hands of Señor José F. Ramirez, certain documents, accompanied by a note to the effect that "The tribe of the Seris speak Arabic, and it is understood by the Moors at the first interview"—this note merely expressing a prevailing current opinion. Undertaking to test the opinion, Señor Ramirez sent to Lavandera, in Sonora, a number of words in three Arabic dialects, at the same time asking for the Seri equivalents; and the inquiry yielded a Seri vocabulary (probably the first ever printed) of eleven words. Of these none show the slightest affinity with the Arabic dialects; at least four (horse, chamber, population, wine) express concepts alien to the Seri; and only three or four can be identified with Seri terms recorded in later vocabularies. No reference is made to Señor Lavandera's aboriginal informant; but there is a strong presumption that it was the official interpreter at Hermosillo and Pueblo Seri—a presumption

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[1] Versuch einer getreuen Schilderung der Republik Mejico besonders in Beziehung auf Geographie, Ethnographie, und Statistik; Hannover, 1844, Band I, p. 441; Band II, p. 415. [113]

[2] Ibid., Band II, pp. 419-420.

[3] Ibid., Band, I p. 210.

[4] Peñafiel defines "Seris" as the "name of a tribe of Sonora, originating probably in the Opata language" (Nomenclatura Geográfica de México—Etimologías de los Nombres de Lugar . . . por el Dr. Antonio Peñafiel, primera parte, 1897, p. 225); while Pimentel defines two suggestively similar Opata words, "Seravi, paso seguido y bueno", and "Sireri, velocidad de la persona que corre" (Vocabulario Manual de la Lengua Opata, Bol. Soc. Mex. Geog. y Estad., tomo x, 1863, p. 305), i. e., a good and direct pace, and the speed of a person running, respectively (cf. postea, p. 125). [101]

114 warranted by coincident historical records and statements of contemporaries still living, to the effect (1) that an official interpreter was +125 there then and for a long time later, (2) that neither then nor later were there other Seri representatives able to furnish vocabularies at Hermosillo, Pueblo Seri, or other towns, and (3) that at that time (as at most others) the relations between the Seri and the whites were such as to prevent amicable communication through casual meeting or otherwise.

Proceeding with his discussion, Señor Ramirez sought to correct the allegation of Abbé Hervas that "in the mission of Belen live three nations, called Hiaqui, Seri, and Guaima, who speak *three different languages*." After quoting a Jesuit manuscript of July, 1730, reporting that "the language of the Seris is the same as that of the Guaimas", he added a significant statement contained in a manuscript report from the Bishop of Sonora, directed to Don José de Galvez, under date of September 29, 1784, concerning the mission of Belen: "Two nations of Indians, Pimas Bajos and Guaimas, live united, the latter having abandoned their pueblo under the continuous assaults of the Seris. The Pimas use their own language. . . . The Guaimas use their ancient language." Summarizing the evidence (of course secondhand and derived from the observations and reports of the missionaries), Señor Ramirez held as proved, first, "the existence of two diverse languages at the mission of Belen—that of the Guaimas and that of the Pimas Bajos"; and second, that "the Guaimas and the Seri are the same".[1] It would appear that Señor Ramirez hardly appreciated the significance of the statement of sixty-four years before that the Guayma were still using their "ancient" language, with the implication that they were acquiring familiarity with the Piman tongue—a familiarity that may well have misled later inquirers.

It is just to say that scientific knowledge of the Seri began with the visit to Hermosillo of United States Boundary Commissioner John Russell Bartlett, on December 31, 1851. True, Commissioner Bartlett approached no nearer Seriland than Hermosillo and Guaymas, and saw but a single Seri; yet he obtained an excellent vocabulary and considerable collateral information from this Indian. According to this information—

> +175 The Ceris tribe of Indians, with the exception of those which are christianized and reside in the village near Hermosillo, occupy the island of Tiburon in the Gulf of California, north of Guaymas. Although believed not to number over 150 warriors, they have long been the dread of the Mexicans between Guaymas and Hermosillo, as well as the country to the north, on account of their continual depredations and murders. Their practice is to lie in wait near the traveled roads, and there surprise small and unprotected parties. Their place of abode being on an island or the shores adjacent, and their subsistence being chiefly gained by fishing, they have no desire to steal animals, which would be of no use to them; nor do they take any prisoners. To murder and plunder small parties of Mexicans seems

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[113] [1] Lenguas Primitivas, in Boletin del Instituto Nacional de Geografia y Estadistica de la Republica Mexicana, third edition, tomo I, Mexico, 1863, pp. 245-246.

to be their only aim, and every arrow or lance thrown by the Ceris that pierces the skin causes death, as all are poisoned. Many expeditions, fitted out at a great expense, have been sent against them; but, though commanded by competent officers, all have failed. The number being so small, they manage when pursued to conceal themselves where they can not be found. The island of Tiburon, as well as the mainland adjacent, is exceedingly barren and destitute of water; hence parties have suffered greatly in the campaigns against them, without accomplishing anything. I was told that the Government had already expended more than $1,000 for every male of the tribe. The last serious attack of these people was made upon a gentleman travelling to Guaymas in his carriage with his family and attendants, embracing 16 persons. They were surprised in an unfrequented place and every soul put to death.[1] 175X

Commissioner Bartlett quoted Hardy's description of the arrow poison, and, speaking of the Seri tongue, added:

> I found it an extremely harsh language, very difficult to express with our letters, and totally different from any aboriginal tongue I had heard spoken; . . . but it was impossible for me, without a close philological comparison with other Indian languages, to arrive at any correct conclusion as to whether this people are allied or not to other aboriginal tribes.

He also referred to a prevalent notion that "the Ceris were of Asiatic origin, in proof of which some statements were made too improbable to repeat. This idea seems to have originated from the resemblance between their name and that given by the ancients to the Chinese."

In order to obtain a Seri vocabulary, Commissioner Bartlett had a messenger dispatched "to a pueblo or village of these Indians near Hermosillo. The person sent for made his appearance in a few hours"; he was "a good-looking man, about 30 years of age. His complexion [115] was fair, and resembled that of an Asiatic rather than an American Indian. His cheek bones were high, and his head round and well formed, though the anterior portion was somewhat angular and prominent. His hair was short, straight, and black. He was a full-blooded Ceris, and came originally from the island of Tiburon. In about three hours I completed the vocabulary quite satisfactorily to myself."[2] The vocabulary was not printed with the narrative; nor were references made to the Seri population, either in the pueblo or in Seriland.

While the vocabulary was not published by Commissioner Bartlett, 114 it was preserved and passed into the hands of George Gibbs, who made a systematic transcript;[3] this came into possession of Dr Albert S. Gatschet, and a copy is preserved in the archives of the Bureau of American Ethnology. The name of the native informant is not recorded, 115 but fortunately he was found still living, and was fully identified, during the expeditions of 1894 and 1895—especially toward the end of the

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[1] Personal Narrative of Explorations and Incidents in Texas, New Mexico, California, Sonora, and Chihuahua, Connected with the United States and Mexican Boundary Commission, during the years 1850, '51, '52, and '53; New York, 1854, vol. I, p. 463 et seq. 113

[2] Ibid., pp. 463-466.

[3] This transcript is entered in a blank schedule Vocabulary of 180 Words, printed by the Smithsonian Institution for Gibbs, with a supplementary sheet; it is dated January 1, 1852; and while the published "Narrative" implies that it was recorded December 31, 1851, the manuscript date is confirmed by the Seri interpreter, Kolusio.

115 latter, when, on January 4, 1896, he was employed as an informant. He was then a fine-looking man of noble stature and figure, and of notably dignified air and manner, dressed in conventional attire; his hair was luxuriant, iron-gray in color, and trimmed in Mexican fashion. His looks indicated an age of about 70, but in his own opinion (which was corroborated by that of Señor Pascual Encinas and other old acquaintances) he was at least 75. His movements were vigorous, his eyes clear and bright, his vision good, and, except for hardly perceptible imperfection of hearing, he was in full possession of normal faculties. He was in the employ of the state as a trustworthy attaché of the governor's palacio, where his services were nominal; his real function was that of a Seri interpreter in case of need; and on the day specified he was temporarily assigned to the service of the expedition by His Excellency Governor Corral. By Mexican acquaintances he was commonly called Fernando, though he called himself Kolusio, sometimes using the former designation as a forename; he was also known as "El General" (= Chief), or "El General de los Seris". He had a vague memory of Tiburon island, which he left in childhood (at about 6 years of age, according to his estimate) and had never revisited, though he had been on the Seri border so late as 1870. Except when temporarily at Rancho San Francisco de Costa Rica, he had lived in Pueblo Seri, usually reporting in Hermosillo daily for such duty as might be assigned to him at the palacio. He was aware that he was regarded as a tribal outlaw, and admitted that no consideration could induce him to approach Seriland, since he would be slain by his tribesmen more eagerly than any alien; indeed, he hardly dared venture so far westward as Molino del Encinas, in the outskirts of Hermosillo, and only did so in daylight or in company of others. His few kinsfolk in Pueblo Seri had died or deserted so long before that he had forgotten names and dates; and, as he remarked with half-realized pathos, he had been alone amid aliens for very many years ("muy muchos años"). The linguistic inquiries put to him reminded him of previous interrogations of the
114 sort, and he voluntarily described the visit of a distinguished American
115 who, a long time ago (more than 40 years, he thought), came down from Ures, with many books and papers, and spent New Year's day in
+175 interrogating him about his language and his people. He was much impressed with the ability displayed by the "Gringo muy grande" in writing the terms and afterward repronouncing them properly; and he described the visitor as appearing very pale and sick ("muy pálido y malo"), and under the necessity of frequently resting and taking medicine, and also as having wavy hair, worn so long as to hang down over the neck and shoulders. He could not recall that he had ever heard the American's name; but his description pointed clearly to Commissioner Bartlett, who had risen from a sick-bed at Ures and was on his way to Guaymas to get the benefit of a sea voyage, and who wore his hair long during a part or all of his expedition (as was subsequently

ascertained by extended inquiry). Kolusio also remembered "giving his language" (a bold if not sacrilegious act, according to his view) to two or three other persons, (one "not a Mexicano" though speaking Spanish, none "Americano"[1]); but the first-mentioned instance was the one most deeply impressed on his mind. At this time (1896) he retained a working knowledge of the Seri tongue, and was able to serve satisfactorily as a Spanish-Seri interpreter; yet careful test showed that he had forgotten numerous native terms, and sometimes inadvertently substituted other Indian (Yaqui, Papago, and probably Opata) and Spanish words; while he knew so little of the tribal customs and beliefs that inquiries pertaining to them were too nearly fruitless to be long pursued. Undoubtedly his knowledge of the Seri tongue was fresher and fuller in 1832; but since he was practically isolated from his tribe in early childhood, he probably never possessed much information concerning the esoteric characters of his people. 115 [114] [175] x

The next noteworthy scientific student of the Seri was Johann Carl Eduard Buschmann, who visited various Mexican tribes, but whose knowledge of the Seri was wholly secondhand. Quoting Villa-Señor and Arrecivita and other early writers, noting unfortunate passages from Bartlett, and magnifying Mühlenpfordt's misapprehensions into positive error, he reduced knowledge of this and neighboring tribes to chaos. The "Guaymas" were separated from the "Seris (oder Seres)", and these (at least by implication) from the "Tiburones", while the "Piatos" were combined with the Seri, the traditional alliance with the Apache was greatly overdrawn, and the "Heri oder Heris" and the "Tepocas" were treated as distinct.[2] No new facts were adduced, no use was made of local sources of information, and no notice was taken of other than literary data. 114 175x

In 1857 the gigantic surveying enterprise of Jecker & Co. was undertaken, under a concession from the Government of Mexico, and the scientific surveys were intrusted to a commission headed by El Capitan Carlos Stone (General Charles Pomeroy Stone, U.S.A.). The commission headquartered at Guaymas, purchased vessels for the survey of the coast, and began operations also in the interior; Bahia Pinacati and George island (named by Hardy in 1826) were surveyed, as well as the entire Sonoran coast south of Guaymas, and "one hundred miles of coast near Tiburon", besides many hundred square miles of valuable lands. At this stage friction developed between the progressive commission and the conservative Sonorenses, which ended in the expulsion of the scientific commission by the State government.[3] By reason of the 175x

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[1] At the time of inquiry the importance of the other vocabularies was not suspected, and the interrogation was not pushed far enough to permit identification of the persons to whom they were given. [124]

[2] Die Spuren der aztekischen Sprache im nördlichen Mexico und höheren amerikanischen Norden. Zugleich eine Musterung der Völker und Sprachen des nördlichen Mexicos und der Westseite Nordamerikas von Guadalaxara an bis zum Eismeer. Von Joh. Carl Ed. Buschmann (in Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin, aus dem Jahre 1854, zweiter Supplement-Band); Berlin, 1859, pp. 216-221 and elsewhere. [113]

[3] Arizona and Sonora, etc., by Sylvester Mowry; New York, 1864, pp. 86-102.

†175 premature termination of the work, few of the observations and other results were ever published. General Stone himself traveled extensively in Sonora, and delved deeply in the historical records of northern [114] Mexico; and, while there is no indication that he ever came in personal contact with the Seri, he collected and sifted current local information relating to the tribe with notable acumen. In certain "Notes" prepared in Washington in December, 1860, he wrote:

> 105 †175 The *Ceris* are a peculiar tribe of Indians occupying the island of Tiburon and the neighboring coast. They are yet in a perfectly savage state, and live solely by fishing and hunting. Having been at war with the whites from the time of the first missions, they have become reduced in numbers to about 300, counting some 80 warriors. They are of large stature, well made, and athletic. In war and in the chase they make use of poisoned arrows, the wounds from which are almost always fatal. In preparing the poison, it is said they procure the liver of a deer or cow, and by irritating rattlesnakes and scorpions with it, cause it to be struck by a great many of these reptiles. They then hang up the mass to putrefy in a bag, and in the drippings of this bag they soak their arrowheads. I can not vouch for the truth of this statement, but it is current in Sonora. I was informed by a gentleman in Hermosillo that one of his servants, who was slightly shot by a Ceri's arrow, died quickly from the effect of the wound (which mortified almost immediately) in spite of the best medical treatment. Their language is guttural, and very different from any other Indian idiom in Sonora. It is said that on one occasion some of these Indians passed by a shop in Guaymas, where some Welsh sailors were talking, and on hearing the Welsh language spoken, stopped, listened, and appeared much interested, declaring that those white men were their brothers, for they had a tongue like their own. They are very filthy in their habits, and are said to be worshipers of the moon.[1]

†175 Another Mexican traveler of note who collected local and contemporary information concerning the Seri, though enjoying no more than slight inimical contact with them, was Herr Clemens A. Pajeken, of Bremen (for some time a resident of California). He classed as wild Indians ("Wilde Indianer, Indios broncos") the Seri and Apache tribes. Of the former he wrote:

> 105 †175 Ceris. This is a small tribe, their number not exceeding 400 souls, or rather head [deren Seelenzahl oder besser Kopfzahl]; yet the government of the State could not restrain this little band of robbers and marauders that for more than twenty years have perpetrated their atrocities on travelers between the port of Guaymas and the city of Hermosillo, the metropolis of the State. . . . The Ceris appear not to grasp the idea that they are human. Like the prey-beasts of the wilderness, they go out to slay men and animals, sparing only their own kind. In many respects they are viler than the beasts, since they slay without need merely to satisfy a lust for slaughter. They are not only the stupidest and laziest of the Indians of Sonora, but also the most treacherous and deceitful. During the Spanish rule, from the time the first visit was made to lead them toward social life, they have rebelled more than forty times. Only a couple of families [ein paar Familien] still reside in the village [Pueblo Seri], where they make ollas and subsist on the offal of the shambles. The proper home of these barbarians is the island of Tiburon and the adjacent coasts, whither they return after their outbreaks, although it is an incredibly desert region. Thence they repair to the highways to kill travelers and arri-

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[113] [1] Notes on the State of Sonora, by Charles P. Stone, 1860, Washington, 1861, p. 19. Reprinted in Historical Magazine, vol. v, 1861, pp. 161-169.

> ores, or to the ranges to steal cattle. They confine themselves to the bow and arrow, and the latter are poisoned, so that every wound made by them is deadly, or at least highly dangerous. On my second journey into the interior of the country my horse received an arrow in the hip; the arrow, which entered 4 inches, could not be withdrawn until the following day; and for seven months the wound suppurated. . . . Their chief food consists of oysters, mussels, snakes, with fish and other sea food, which they consume entirely raw and which surrounds them with an intolerable stench; though this may be partly due to their exceeding uncleanliness, since the process of washing is wholly unknown to them. Their clothing consists of a kilt of pelican skin. They tattoo their faces, and some pierce their noses to insert a certain green stone [obsidian]. They are of dark copper color, large and strongly built. Although in their faces no human sentiments can be discerned, yet they can not be called ugly. Their limbs are so beautifully proportioned that the Spanish ladies in Hermosillo view with envy the slender shapes and the comely hands and feet of the young Ceris maidens. They wear no headdresses, and as their coarse, shaggy hair is neither combed nor cleaned, it sticks out in tangled tufts in all directions like spines on a hedgehog; this alone gives them a forbidding appearance. Their speech is quite like their character; it is guttural, discordant, and meager, resembling more the howling of wild animals than human speech, wherefore it is difficult for a human to learn. They have no religion—at least, I do not deem the gambols and amusing capers in which they indulge at the new moon to be religious customs. The tribe is constantly diminishing in numbers, and it is hoped they may soon disappear from the earth by natural decrease—unless the State government sooner undertakes a war of extermination.[1]

105 175x

Herr Pajeken's record bears inherent evidence (at least to one familiar with the region) of reflecting the current local knowledge and opinion concerning the Seri with unsurpassed—indeed unequaled—fidelity; and it is also of value in that it indicates the approximate number of the tribe then surviving in Pueblo Seri, and in that it gives the contemporary estimate of the tribal population.

114 175x

Among the more careful students of the Seri at second hand should be mentioned Buckingham Smith, an enthusiastic collector, translator, and publisher of rare Americana. In the introduction to an anonymous and dateless grammar of the Heve language he wrote in 1861:

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> The lower Pimas are in the west of the province [of Sonora], having many towns extending to the frontier of the indomitable Seri, who live some 30 leagues to the north of the mouth of the Hiaqui, and have their farthest limit inland some dozen leagues from the sea, finding shelter among the ridges and in the neighboring island of Tiburon.

He added in a note:

> The Guaimas speak nearly the same language as the Seri, are few in number, and live among the Hiaqui in Belen and elsewhere, having retreated before the sanguinary fury of their conquerors.[2]

While the scientific knowledge of the Seri began with Bartlett's visit, it assumed definite shape only through the classic researches of Don Francisco Pimentel (Count Heras) in the early sixties. His analysis and classification of the Seri tongue rest on a short vocabulary

114 175x

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[1] Reise-Erinnerungen und Abenteuer aus der neuen Welt in culturgeschichtlichen Bildern, von C. A. Pajeken; Bremen, 1861, pp. 97-99.

[2] A Grammatical Sketch of the Heve Language, translated from an unpublished Spanish manuscript, in Library of American Linguistics, vol. iii, New York, 1861, p. 7.

[113]

+175 [114] collected by Señor D. A. Tenochio and transmitted to the Mexican Society of Geography and Statistics. Noting the condition of the tribe at the time, Señor Pimentel wrote:

> The Seris are now reduced to a few families only, inhabiting Sonora, especially the island of Tiburon, for which reason they are also known sometimes by the name Tiburones. The Indians called Salineros, who live on the borders of Pimeria Alta, and the Tepocas, who live toward the south, belong to the Seri nation. The Seris have always been notable for their ferocity and barbarism, preferring death in war against the whites to the adoption of civilization. They are dreaded and notorious for their arrows, poisoned with a most virulent venom [emponzoñadas con activisimo veneno]. They are tall and well formed, and their women are good-looking. By reason of their distrust of the whites, it has not been possible to ascertain their traditions, further than that their ancestors came from distant lands of unknown direction. Of their religion it is known that they adore daily the rising sun.[1]

After brief discussion of the grammar, and extended comparison of some sixty out of the seventy vocables selected by Señor Tenochio, he concluded:

> [197] Although in the list of Seri words consulted the foregoing reveal analogies with those of the Mexican group, there are, without doubt, other terms belonging exclusively to the Seri or some other branch extraneous to the Mexican group; for this reason it would appear that the idiom represents a distinct family.[2]

The list of these distinct words was appended. Referring to the dialects, Señor Pimentel expressed the opinion, based on literary references, that the "Guayma" or "Gayama", "Upanguaima", and "Cocomaques" may be considered as belonging to the Seri family.[3]

115 +175 While Señor Pimentel gave credit to his informant, Señor Tenochio, he did not indicate the original source of the vocabulary; but the source may be defined approximately by a process of elimination: there is hardly a possibility that the terms were obtained from any tribesmen in Seriland, since they were all inimical to the whites, and since very few of them have ever known enough of the Spanish tongue to permit communication with the Mexicans; accordingly, it is practically certain that the Seri interpreter must have been either (1) a resident of Pueblo Seri or (2) an attaché of rancho San Francisco de Costa Rica (of which more anon); and in either case it would seem certain that the native informant could have been none other than the standard Seri-Spanish interpreter of the last half century—Kolusio. Indeed, Kolusio was, at the time, the only Seri habitué of Pueblo Seri possessing sufficient knowledge of the Spanish and enough intelligence and independence to "give his language", and was one of the two frequenters of the rancho similarly equipped.

114 +175 197 Pimentel's contemporary, Licenciate Manuel Orozco y Berra, contributed in important measure to systematic knowledge of the Seri, which

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[113] [1] Cuadro Descriptivo y Comparativo de las Lenguas Indígenas de México, ó Tratado de Filología Mexicana, por Francisco Pimentel, segunda edicion unica completa, tomo II; Mexico, 1875, p. 239. The first edition of the work was published in two volumes, dated, respectively, 1862 and 1865.

[2] Ibid., p. 241.

[3] Ibid., p. [illegible]

he defined (apparently on the basis of the Tenochio vocabulary systematized and published by Pimentel) as a distinct linguistic family with two dialectic branches,[1] viz: 175 197 [114]

IX FAMILIA.—SÉRI.

XXXIII. *Séri*, por los séris, séris, tiburones, tepocas, salineros, en Sonora.
61. I. *Upanguaima*, por los upanguaimas, en Sonora.
62. II. *Guaima*, por los guaimas, guaymas, gayamas, cocomaques, en Sonora. 131

Orozco's map assigns to the Seri family an immense area (recalling Villa-Señor's "despoblado") extending from just above the mouth of the Yaqui, northward to the thirtieth parallel on the coast, stretching inland nearly to Cucurpe, Opodepe, and Ures, and including Tiburon; the "Salineros" lying adjacent to the coast in the north, the "Tepocas" medially, and the "Guaymas" in the south, within this area. In elucidating the map he wrote, under the title "El séri.—El upanguaima.—El guaima": 175

> The *Séris*, a tribe inhabiting Sonora, *forms*, with its subtribes, a separate family. By their language, by their customs, and by their physiognomy, they are completely set apart from affiliation with the surrounding nations; and apparently they have lived in the district which they now occupy from times anterior to the establishment of the Pima race and its affines; their use of poisoned arrows recalls the Caribs of the islands, as well as of the continent, and it seems not unlikely, although very curious, that they are related to them. The *Séris*, known also as Tiburones, a name derived from the island of Tiburon in the *Mar de Cortés*, which serves them as a shelter, considered as parts of their tribe the Tepocas and the Salineros. 101 175

The "Upanguaima" (a very small tribe occupying the Seri border) and the "Guaimas", as well as the "Cocomaques" were combined chiefly on the authority of Jesuit writers.[2] In describing the State of Sonora he further wrote:

> The *Séris*, bounded by the sea on the west, the Pimas Altos on the north, the Opatas and the Pimas Bajos on the east, and the pueblos of Rio Yaqui on the south, form the smallest nation of Sonora, but at the same time the most cruel and deceitful and the least capable of reduction to political organization. Hardly uniting with the smaller pueblos as at Populo and Belen, the rest of the nation engaged so constantly in cruel warfare that it was necessary to persecute and exterminate them. . . . Small as was the tribe, three divisions are known: the Salineros, extending to the confines of Pimeria Alta; south of them the Tepocas, nearest to the island of Tiburon; the Guaymas and Upanguaymas occupying the territory adjacent to the harbor of the same name, afterward added to the pueblo at Belen and blended with the Indians of Rio Yaqui. Ferocious and savage, they preferred to die in war against the whites rather than adopt their usages and customs; lazy and indolent, they so surrendered themselves to the passion of intoxication that mothers conveyed aguardiente from their mouths to the smallest babes. They are tall and well formed, the women not lacking in beauty. The poison with which they envenom their arrows is proverbial for deadly effect; they compound the venomous juice from a multitude of ingredients and fortify the compound by superstitious practices.[3] 175 [131] [101]

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[1] Geografía de las Lenguas y Carta Etnográfica de México, Precedidas de un Ensayo de Clasificación de las Mismas Lenguas y de Apuntes para las Inmigraciones de las Tribus, por el Lic. Manuel Orozco y Berra; Mexico, 1864, p. 58. [113]

[2] Ibid., p. 42.

[3] Ibid., pp. 353-354.

x175 The classifications by Pimentel and Orozco were widely accepted, and were given still wider currency by republication in standard 114 works, such as the classic dictionary of the Nahuatl tongue by Rémi Siméon, in which is defined "La famille *Seri*, dans la Sonora, avec 3 197 idiomes: le *Seri*, le *Guaima* et l'*Upanguaima*."[1] In his ethnographic tableau of the nations and languages of Mexico, M V. A. Malte-Brun followed Orozco almost literally, save that he emphasized the suggested Caribbean affiliation of the Seri, saying:

> They make use of poisoned arrows, and when one studies their manners, their habits, their modes of life, one is tempted to find in them a strong affinity [grande affinité] with the Caribs of the continent and the islands.[2]

During the seventies Hubert Howe Bancroft was engaged in collecting material for his monumental series of works, and in arranging the ethnologic data for publication. Of the Seri he wrote:

> East of the Opata and Pima bajo, on the shores of the Gulf of California, and thence for some distance inland, and also on the island of Tiburon, the Ceri language with its dialects, the Guaymi and Tepoca, is spoken. Few of the words are known, and the excuse given by travelers for not taking vocabularies is, that it was too difficult to catch the sound. It is represented as extremely harsh and guttural in its pronunciation and well suited to the people who speak it, who are described as wild and fierce. It is, so far as known, not related to any of the Mexican linguistic families.[3]

The only vocabulary of this language which Bancroft was able to find was added (without reference to the aboriginal source); it comprised the eleven words collected by Lavandera and discussed by Ramirez in 1850.[4]

114 The Seri, with their affines, the Tepoka, Salinero, Guayma, and Upanguayma, were included by Bancroft in his arbitrarily defined x175 "Northern Mexican family".[5] The accompanying map (which is highly inaccurate) located the "Salineros" on the gulf coast, considerably north of the common embouchure of "R. de Horcasitas" and "Rio de Sonora", while the "Seris" were more conspicuously represented about the broad estuary into which the rivers embouch, and the "Tepocas" were located still farther southward on both Tiburon and the mainland, the island being placed too far southward and the river much too far northward.[6] Numerous data relating to the Seri were incorporated in his text; all were second-hand, though many were taken from unique or rare manuscripts. The coastwise natives of Sonora were said to "live on pulverized rush and straw, with fish caught at sea or in artificial enclosures"; mention was made of the allegation that "the Sali-

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[1] Dictionnaire de la Langue Nahuatl ou Mexicaine, rédigé d'après les Documents imprimés et Manuscrits les plus authentiques et précédé d'une Introduction; Paris, 1885, p. xviii.

[2] Tableau de la Distribution ethnographique des Nations et des Langues au Mexique; Congrès International des Américanistes, Compte-rendu de la Seconde Session, tome ii, 1878, p. 37.

[3] The Works of Hubert Howe Bancroft, vol. iii (The Native Races, vol. iii, 1882, p. 704). The "east" in this quotation is obviously a misprint for west.

[4] Ibid., p. 705.

[5] Op. cit., vol. i, pp. 604-605.

[6] Ibid., p. 577.

sexes sometimes eat their own excrement"; anthropophagy was noted, 114
but as pertaining rather to the interior than to the coastwise tribes;[1]
and prominence was given to the Seri arrow poison, of which an early 1757
author wrote:

> The poison with which they envenom the points of their arrows is the most active that has ever been known here. . . . It has not been possible to ascertain with certainty the deadly materials of which this pestilential compound is brewed. Many things are alleged, e. g., that it is made from the heads of vipers, irritated and decapitated at the moment of striking their teeth into a piece of lung or of half putrefied human flesh.

Reference was made also to the "magot" (probably the yerba mala of the modern Mexicans) as a source of arrow poison.[2] The girls' puberty feast was said to be kept up for several days among the Seri and Tepoka, and the former were said to "superstitiously celebrate the new moon, and bow reverentially to the rising and setting sun", and also to "employ charms in their medical practice".[3] Finally, the constituent tribes were discriminated in a manner recalling the persistent assumption that the parasite-converts at the missions fairly represented the Seri:

> The Tepocas and Tiburones are fierce, cruel, and treacherous, more warlike and courageous than the Ceris of the mainland, who are singularly devoid of good qualities, being sullenly stupid, lazy, inconstant, revengeful, depredating, and much given to intemperance. Their country even has become a refuge for evil doers. In former times they were warlike and brave, but even this quality they have lost, and have become as cowardly as they are cruel.[4]

It is evident that this characterization of "the Ceris of the mainland" was based on the degraded scavengers outlawed by the tribe and attached to the missions and pueblos during much of the historical period.

It was also during the seventies that the errors and uncertainties of three and a half centuries concerning the coasts of the Californian gulf were finally brought to an end through the surveys of Commander (now Admiral) George Dewey, U. S. N., and the officers of the United States ship *Narragansett*, under the direction of the Hydrographic Office of the United States. These surveys resulted in trustworthy and complete geodetic location of all coastwise features, in geographic placement of the entire coast-line, in soundings of such extent as to determine the bottom configuration, in tidal determinations, in recognition of the currents, in definition of harbors and anchorages, and eventually in a series of elegant and accurate charts (dated 1873-75) available for the cartographers and navigators of the world. As the largest island in the gulf, Tiburon received especial attention; its coast was accurately surveyed and mapped, while the interior was sketched in considerable detail, and the adjacent channels were carefully defined and sounded.

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[1] The Works of Hubert Howe Bancroft, vol. [illegible] (The Native Races, vol. [illegible], [illegible], p. [illegible].)

[2] Ibid., p. [illegible].

[3] Ibid., pp. [illegible].

[4] Ibid., p. [illegible].

x175 Naturally the surveyors came into contact with the Seri tribesmen. Of them Commander Dewey wrote:

> During the greater part of the year Tiburon Island is resorted to by the Seris (or Ceres) tribe of Indians, who inhabit the adjacent mainland, and their huts and encampments may be seen in many places along the shore, principally on the eastern side of the island. They are reputed to be exceedingly hostile and to use poisoned arrows in opposing the landing of strangers on what they consider their domain, but during the stay of the *Narragansett* in the vicinity they were very friendly. At first they were shy and made threatening gestures, but soon finding that our intentions were peaceable, became friendly and returned our visits to the shore by frequent and lengthy calls on board ship. They are very expert in hunting with the bow and arrow and in catching fish and turtles, which abound in the surrounding waters. The canoes of these Indians deserve especial mention. They [501] are made of long reeds, which are bound together with strings after the manner of *fascines*, three of which when fastened together . . . have sufficient buoyancy to support one or two persons. They kneel in these canoes when paddling, the water being at the same level in the canoe as outside of it.[1]

Illustrations of the "Tiburon canoe" (or balsa), drawn by H. Von 114 Bayer, were also introduced.[2] In addition Mr Von Bayer succeeded in obtaining two photographs of Seri Indians, taken on shipboard; one x175 of these is of special interest in that it illustrates the peculiar attitude of the Seri archer in the act of using his weapon.[3]

Unfortunately the surveys were confined to the coast, and the interior remained unmeasured and unmapped save on the basis of tradition and travelers' tales, supplemented by a few vague itineraries and traverses. Except along the international boundary and the railway (Ferrocarril de Sonora), the locations of pueblos and ranchos remained guesses, the delineation of mountains remained a work of imagination, and even the best cartographers continued to run in rivers at random or in such wise as to afford artistic effect.[4]

In 1879 M Alphonse L. Pinart traveled extensively in northern Mexico and southwestern United States, and made considerable linguistic collections among various tribes. Desiring to obtain a Seri vocabulary, he planned a visit to the tribal territory; but on reaching Caborca in March he was met by the information that the Seri were on the warpath, and had recently devastated a hacienda on their frontier and slain more than a dozen white settlers.[5] Thence he repaired

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[113] [1] Publication No. 56, U. S. Hydrographic Office, Bureau of Navigation. The West Coast of Mexico, from the Boundary Line between the United States and Mexico to Cape Corrientes, including the Gulf of California (revised edition), 1880, p. 148.

[2] Ibid., pl. xv, p. 136 (one of these illustrations is reproduced in figure 20).

[3] The negatives of these pictures were retained by Mr Von Bayer, and have been kindly turned over to the Bureau of American Ethnology. Unfortunately the archery negative had been shattered, but enough of the fragments were preserved to show all essential details and to afford a basis for the drawing reproduced in plate XXIX.

[4] The imposing official map of 1890, titled Carta General de la República Mexicana, formada en el Ministerio de Fomento con los datos mas recientes, por disposición del Secretario del Ramo, General Carlos Pacheco, engraved and printed by Erhard Hermanos, Paris, on a scale of about 50 miles to the inch, represents Rio Bacuache as about the right length and with its center in about the right location, but as running at almost exactly right angles to its actual course; and it contains divers other equally startling errors.

[5] Recorded by Gatschet, Zeitschrift für Ethnologie, Berlin, Band xv, 1883, p. 123. The location of the hacienda was not specified, but there are local traditions of Seri raids about that time, both at Hacienda Serna (between Caborca and Libertad anchorage) and at Bacuachito.

to Pueblo Seri, and early in April obtained there a Seri-Spanish 114 vocabulary of several hundred words, with a number of short phrases throwing some light on the grammatic construction. This record was 175X transmitted to Dr Albert S. Gatschet. It comprises a title page inscribed "Vocabulario de la lengua Séri | Interprete el Gl. de los Seris | y otro Indio. | Pueblo de Seris | 4 Abril 1879"; [113] four foolscap sheets (written on both sides, thus making 16 pages) of vocabulary; and a final page bearing two short phrases and inscribed "Los Séris, me dice el general de ellos, son como doscientos hombres de llevar armas—viven todavia parte en la isla de Tiburon, parte en la costa.[1] Pueblo de Seris, 4 Abril, 1879, Alph. Pinart." A transcript of this invaluable vocabulary is preserved in the Bureau of American Ethnology. There is nothing either in the original vocabulary or in the known correspondence relating to it to identify the aboriginal informant, [115] but the identification is made easy through the coincident testimony of living witnesses and the unmistakable implication of the historical records to the effect that there was at that time but a single Seri Indian[2] resident at Pueblo Seri—i. e., the official interpreter, "El General" Kolusio. This identification is strengthened by the remarkable similarity between this vocabulary and that of Bartlett, a similarity made the more striking by the fact that one was recorded in English, the other in Spanish; the identification is supported, too, by Kolusio's memory of "giving his language" to a stranger "not a Mexicano" yet familiar with the Spanish; and the identification is practically established by the considerable number of terms expressing concepts alien to the Seri (e. g., ax, adobe, house, horse, hog, field, irrigate, pigeon, thresh, tobacco, shirt, the names of the months, etc), evidently acquired through long and intimate acquaintance with Mexican customs and domiciles and modes of thought—for all these concepts were familiar enough to Kolusio, yet to no other known Seri Indian of recent decades. Accordingly it may be deemed practically certain that M Pinart's vocabulary, like that of Commissioner Bartlett, was obtained from Kolusio; and it is at least strongly probable that both the Lavandera-Ramirez and the Tenochio-Pimentel vocabularies were derived from the same aboriginal source—an indubitably excellent source, save for the occasional interjection of alien notions, and the infrequent substitution of foreign equivalents for forgotten terms.

Barred from Seriland by the current war craze, M Pinart was prevented from obtaining much collateral information concerning the Seri; [197] but he concluded (on grounds not stated) that "the Tepoca spoken on

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[1] "The Seris, the chief tells me, comprise about 200 men fit to bear arms—they still live part on the island of Tiburon, part on the coast."

[2] M Pinart's reference to his interpreter is not only impersonal but ambiguous. "Interpreter the chief of the Seri and another Indian" might be considered to imply two Seri Indians, though it may, with equal linguistic probability, be interpreted to mean the specified Seri and another Indian; and while the temporary presence of a second Seri at the pueblo seems possible, the sum of probabilities points so clearly the other way as to demand the latter interpretation.

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the south of Rio del Altar is identical with the Seri",[1] and also that "the Guaymas were of the stock of the southern Pimas, or Nebomes".[2]

While M Pinart failed to publish, his linguistic collections were compared, systematized, and made public by Dr Albert S. Gatschet in a notable memoir on "Der Yuma-Sprachstamm", 1883. Comparing the Seri, as represented by the Pinart and Bartlett and Pimentel vocabularies, with the Yavapai, M'Mat, and incidentally with the Kouino, Tonto, Cochimi, and other tongues, Dr Gatschet was led to adopt the suggestion of Professor Wilhelm Herzog[3] that the Seri is a dialect of the Yuman stock. In the comparative vocabulary, which comprises about a hundred and forty Seri words (selected from the 611 terms in the Pinart collection), there are perhaps a dozen terms presenting some similarity to those of one or more Yuman dialects; among these are terms for ax, tree, split, tobacco, heaven, pigeon, dog, and others of presumptively or certainly alien character.[4]

Herzog's suggested classification, with Gatschet's indorsement, was accepted even more promptly and widely than the earlier classifications of Pimentel and Orozco. It was tacitly adopted by Director J. W. Powell in his classic arrangement of Indian linguistic families of America north of Mexico;[5] it was explicitly approved by Adolph F. Bandelier in his "Final Report of Investigations";[6] and it was implicitly accepted and fortified by Dr Daniel G. Brinton in his work on "The American Race".[7] Brinton's Seri words were "chiefly from the satisfactory vocabulary obtained by the late John Russell Bartlett"; of the 21 terms, about 8 (including that for the alien concept "house") suggest affinity with the Yuman, chiefly in the Mohave dialect; the others are either wholly distinct or only superficially similar, e. g., in the concurrence of a consonant or two, or merely in the correspondence in number of syllables.[8]

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Stated briefly, the scientific researches relating to Seriland and the Seri during the fifty years from the fourth decade of the century to the middle of the last decade resulted in (1) a satisfactory survey of the coast, (2) the collection of two excellent Seri vocabularies, with a few others of less extent, and (3) two discrepant linguistic classifications of the tribe, both widely quoted and accepted.

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[1] Gatschet, op. cit., p. [illegible].

[2] Bandelier, Final Report of Investigations among the Indians of the Southwestern United States, part I, in Papers of the Archæological Institute of America, American series, III, Cambridge, 1890, p. 78. As already noted, it is probable that the Guaymas lost their "antigua idioma" (Ramirez, op. cit., p. 149) long before M Pinart's visit; and pending definite statement of the facts on which his conclusion rests it is necessary to retain the classification based on specific and repeated, albeit unskilled, observations of the identity of the Guaymas speech with that of the Seri.

[3] In correspondence with Dr Gatschet, op. cit., p. [illegible].

[4] Dr Gatschet has recently revised the data and recognized the distinctness of the Seri tongue (Science, new series, vol. [illegible], p. [illegible]).

[5] Seventh Annual Report of the Bureau of Ethnology, 1885-'86, Washington, 1891, p. 137.

[6] Op. cit., p. 74.

[7] The American Race: A Linguistic Classification and Ethnographic Description of the Native Tribes of North and South America; New York, 1891, p. [illegible].

[8] Mr Hewitt's discussion (postea, pp. [illegible]) gives fuller details of this short vocabulary.

During the half century of historical silence from 1844 forward, and pending the progress of the desultory researches, the Seri suffered a 175 succession of external shocks more serious in their internal effects than 648 any of those of the three centuries preceding; indeed it is just to say that during this half century the Seri range was curtailed, the Seri customs were modified, and the Seri population was diminished more effectively than during the preceding sesquicentury of fairly definite record. The chief factor in this transformation was an intrepid pioneer, who pushed actual settlement toward the Seri frontier more vigorously than any predecessor—Señor Pascual Encinas, a son of Sonora.[1]

Born near Hermosillo in 1819, Don Pascual was in early maturity at the time of Colonel Andrade's expedition, and was fully conversant with the later history of the Seri. Of adventurous disposition, and holding interests in Bacuachito, he was familiar with the Seri frontier; and in hunting deer and other large game over the vast delta plain of Rio Sonora he had perceived the agricultural possibilities of the region. During the struggle of 1844 he became impressed with the idea that the Seri might be controlled and gradually inducted into useful citizenship through a judicious combination of industrial, educational, and evangelical agencies; and before the end of the year he began the establishment of a rancho (the present Rancho San Francisco de Costa Rica) on the Seri borderland, with the double object of developing new resources and regulating the relations between tribesmen and settlers. Enlisting the aid of a corps of vaqueros, mechanics, and farmers, he excavated a deep well, erected corrals and adobe houses, cleared away the exceptionally luxuriant mesquite forests, fenced fields, and stocked the plains with horses, burros, and cattle. At the same time he sought Seri wanderers and treated them with such kindness and firmness as to gain their confidence; and while most of the tribe held aloof, some attached themselves to the rancho, and a few even were taught to labor, albeit in desultory fashion. In this stage, as for some years after- 175 ward, he was materially aided by his contemporary, Kolusio, then in 648 his physical prime and still in good repute among his kinsmen. Mean- 797 time he obtained the assignment of two priests, who made it their chief duty still further to placate the tribesmen and their families and to induct them into religious observances and belief; and as the confidence of the Indians increased, he had two boys domiciled in the rancho and educated in the Spanish as well as in the faith, in the hope that they might pass into priesthood and so form a future bond with their kin. One of these neophytes disappeared in the troublous times of a later decade, though tradition indicates that he became a tribal outcast (like Kolusio still later) and slunk away to Pitiquito and Altar, and afterward to California; the other, christened Juan Estorga and

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[1] The following paragraphs are condensed from oral recitals by Señor Encinas (a notably straightforward and judicious authority), supplemented and corroborated in all essential details by Señores Andres Noriega, Ygnacio Lozania, and several other habitants of the Seri borderland, as well as by Kolusio and Mashém, several Papago informants, and various collateral documents.

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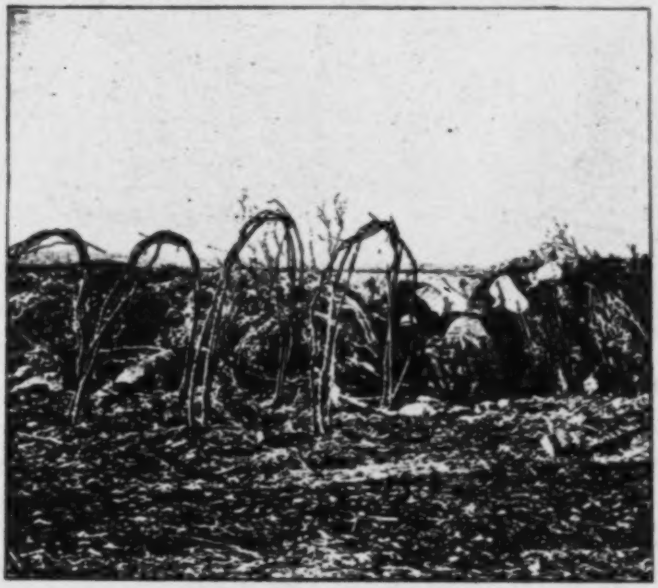
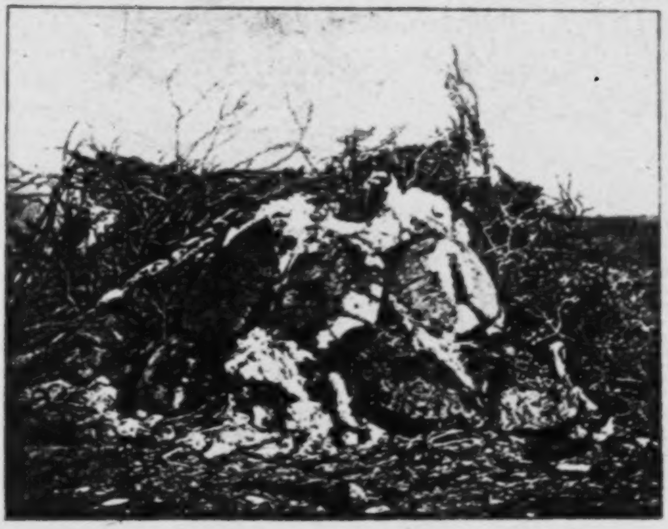
nicknamed El Gran Pelado ("The Great Shorn"), survives as subchief Mashém, long since relapsed into his native savagery, save that he remembers the Spanish, affects a hat, cuts his hair to the neck (whence his nickname), and prefers footgear to the fashion of his fellows.

Industrially, Don Pascual's venture proved successful; the fertile soil, periodically watered from below by the underflow of the semiannual freshets, yielded incredible crops; reveling in the exceptional floral wealth of the delta and tided over bad seasons by the artificial forage, the stock increased and multiplied beyond precedent; and so the rancho became a flourishing establishment, housing a score or more of families and harboring a hundred or two dependents, in addition to the thousands of half-wild horses and cattle. Meantime, the industrial lines ramifying from the rancho formed a drag net for Seri raiders, practically cutting off forays eastward toward Hermosillo and Horcasitas, and greatly reducing the sallies southeastward toward Guaymas and northeastward toward Bacuachito and Caborca; and Don Pascual began to receive recognition and state and federal concessions as a public benefactor. For a decade the industrial and evangelical influence and the effect of the bold kindness of El Patron extended and became felt throughout the tribe, and most of the families visited the rancho at least occasionally. Yet even the best of them remained averse to labor save in sporadic spurts, and indifferent to the religious teaching, save when sweetened by substantial largess; while all but the decrepit and the two carefully restrained neophytes came and went capriciously, and were much given to decamping incontinently by night to return shamefacedly one by one in the course of a week or two, without consistent or adequate excuse for their stampede—indeed the vaqueros habitually classed these nocturnal flights of the Seri and the reasonless stampedes of their stock in the same category. Ostensibly a few of the larger boys and girls and a still smaller number of the adults were helpers about the rancho; actually they were scavengers, consuming the waste of the shambles and the earth-mixed scatterings from the thrashing floors, and saving the rancheros the noisome duty of removing the carcasses of animals dead by disease or accident; and as their indolence increased under the easy régime, they grew into more and more open thievery. By no means deficient in shrewdness and cunning, they adopted numberless devices for imposing on the credulity of the majordomo and other officials of the rancho. When coin-like tokens of stamped copper were used in the transactions of the rancho as equivalents of labor, the Seri ingeniously obtained sheet copper by stealth or barter, systematically counterfeited the tokens, and exchanged them for supplies at the rancho store; it was a favorite trick to surreptitiously break the neck or a leg of a horse, cow, or burro, and report finding the dead or crippled animal, at the same time begging for the carcass; and, whenever opportunity offered, they slyly slaughtered a band of stock, consumed it to the hoofs and horns



HOUSE FRAMEWORK, TIBURON ISLAND



HOUSE COVERING, TIBURON ISLAND

[p. 110 A]

1: McGee E-5 (1894-1895)1898 NU31 [illegible] NU31

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and larger bones, sucked up the blood stains, and buried the few 175
remains in cactus thickets, impenetrable save by their own hardy 648
limbs and bodies. Nor did any of the tribe except the two restrained
neophytes ever really enter the collective life of the patriarchal group [177]
headed by Don Pascual; they attended no industrial or social or churchly function save in response to reminder and solicitation; they craved the white man's medicines in slight disorders, but rejected them in extremis; and the dying or dead were spirited away to be inhumed and mourned, according to their wont, in their harsh but beloved motherland.

During this period of mutual toleration the Seri were so deeply influenced by the white contact that, for probably the only time in their history, they voluntarily allowed an alien free entry into their territory; and Don Pascual explored the coast of Bahia Kino, projected a port, and even visited Isla Tiburon twice or thrice. In one of these visits he was ferried over Boca Infierno on a balsa, but, finding himself unable to keep pace with the swift-footed Seri on their hilly pathways, he returned for his saddle mule; halfway across, the poor animal swimming behind the balsa suddenly plunged and struggled, and, on landing, hobbled out on three legs—the fourth having being snapped by a shark. Warned by this incident, Don Pascual abandoned a half-formed plan of stocking the island, and afterward brought up a small vessel from Guaymas in which he carried across a dozen caballeros (including Don Ygnacio Lozania, who had visited the island with the Andrade expedition); and this party examined the southeastern quarter of the island, watering two or three times at Tinaja Anita, and pushing as far westward as Arroyo Carrizal. On this trip he studied [342]
the Seri house-building, and was the first to note the large use of turtle-shells and sponges in the process.[1]

About the middle fifties it became apparent that the Seri were divid- 177
ing into a parasitical portion clustered about the rancho (as their for- 175 X
bears gathered about Populo and Pueblo Seri long before), and a more 648
independent faction clinging to their rugged ranges and gale-swept fishing grounds; and it became evident, too, that the thievery of the dependent faction would soon ruin the rancho if not checked, or at least greatly diminished. Accordingly the passive policy was modified by introducing a more active police service. At first the penalties for theft and misdemeanors were light, and the system promised well—especially as even a slight punishment was equivalent to banishment, the criminal fleeing to Tiburon on his escape or immediately after the crime; yet the experience of a year or two proved that the escaped
parasites seldom resumed the hard customs of their tribal life, but gen- X
erally returned to the borderland and there preyed on the wandering 175
stock from the rancho. Finally, driven to extremity, and supported 648

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[1] Typical Seri jacales, as described by Don Pascual in 1854, were observed on Tiburon by the 1895 expedition, as shown by the photographs reproduced in plates VII, VIII, and IX.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

X175
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by the state and federal authorities (themselves confessedly unable successfully to cope with the condition), Don Pascual reluctantly adopted a severer régime. Sending out as messengers several Seri still remaining at the rancho, he convened the leading chiefs and clanmothers of the tribe in a council, and announced that the stock-killing must cease, on pain of a Seri head for each head of stock thereafter slain. The Indians seemingly acquiesced, and separated; but within two days a group of Seri women "milled" a band of horses, caught and threw one in such wise as to break its neck, and immediately sucked its blood, gorged its intestines, and buried its quarters to "ripen", after their former fashion. Thereupon a matron remaining near the rancho was sent to demand the delivery of the perpetrators; and, when she failed to return, the vaqueros were instructed to shoot the first Seri seen on the llano. Within two days more, the tribe were on the warpath for revenge—and the war raged for a decade.

During the early months of the Encinas war Don Pascual's vaqueros sought merely to enforce the barbaric law of a head for a head; but, as they found themselves beset by ambush, assailed and wounded by night, despoiled of favorite animals, and kept constantly in that most nerve-trying state of eternal vigilance, their rancor rose to an intensity nearly equal to the savage passion for blood-vengeance; and thenceforth the Seri were hunted from the plain east of Desierto Encinas precisely as were the stealthy jaguar and sneaking coyote—and the ghastly details were better spared. There were few open battles; commonly the vaqueros rode in groups and guarded against ambuscades, and the Seri were picked off one by one; but once in the early sixties Don Pascual, at the head of some 30 vaqueros, fell into an ambush on the frontier, and several of his horses were killed and some of his men wounded, while 60 or 70 Seri warriors were left on the field. Don Pascual's horse received a slight arrow wound, to which little attention was paid; next morning the gash was swollen and inflamed and the beast too stiff and logy for use; in the afternoon the glands under the jaw were swollen, and there was a purulent discharge from eyes and nostrils. On the second morning the animal was hardly able to move, its head was enormously swollen, there were fetid ulcers about the jaws and throat, and the swelling extended to the legs and abdomen. On the third morning there were suppurating ulcers on various parts of the body, while rags of putrefied flesh and stringy pus hung from the head and neck, and the animal was unapproachable because of the stench; during the day it dropped dead, and even the coyotes and buzzards shrank from the pestilential carcass. This and parallel incidents impressed Don Pascual with the dangers incident to Seri war; but fortunately the fact that he—the leader of the party, the first to fall into the ambush, and the target of most of the arrows—had escaped unscathed impressed still more deeply the surviving savages, and they soon sued for peace. Thenceforth he was revered as a shaman greater than those of the tribe, feared as an invulnerable fighter, and honored as a just lawgiver; and

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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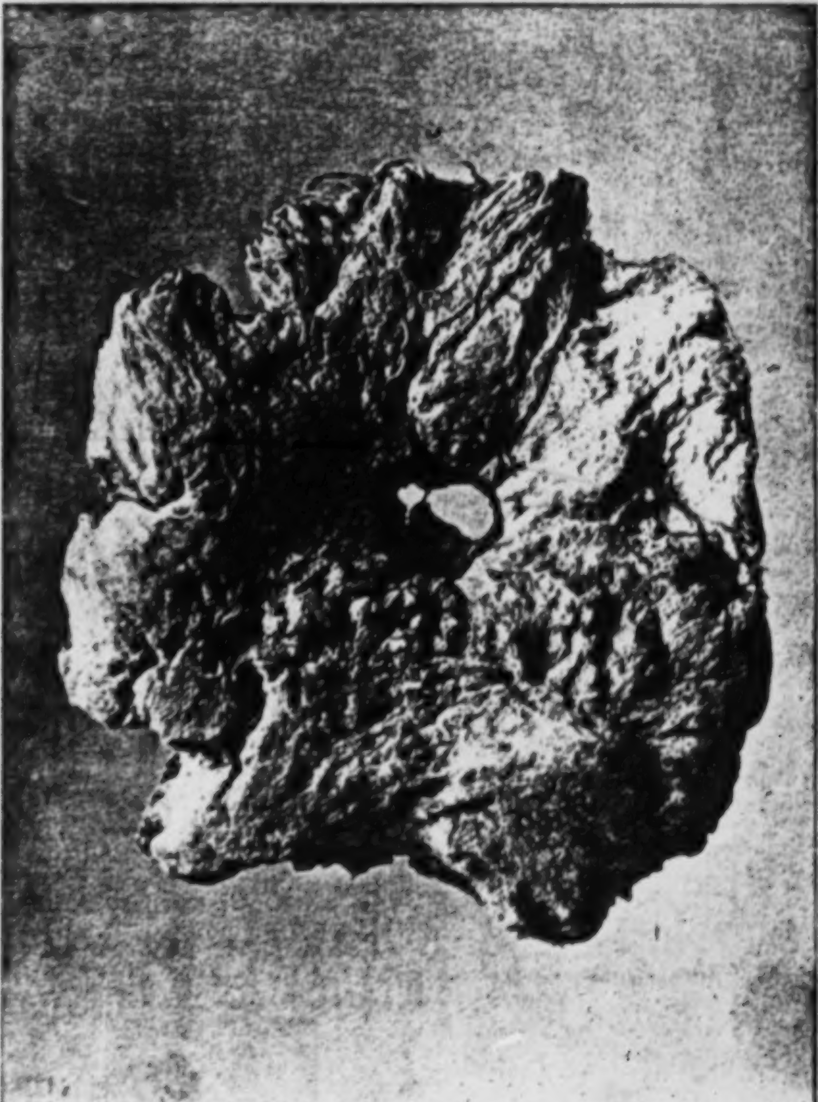

SPONGE USED FOR HOUSE COVERING, TIBURON ISLAND

[p. 112 A].

gradually the condition of mutual tolerance was restored, to rest on a firmer basis than before. 175

648 Don Pascual estimates that during the dozen years of strife between his men and the Seri forces about half of the tribe were slain. The horror of the history of this period may be passed over; it may merely be noted as a casual fact that one of the two Mexicans accompanying the 1895 expedition was credited with 17 Seri heads. When he pointed out the site of his last exploit, a mile or two south of Rancho Libertad, and some incredulity was expressed, he immediately galloped to the spot and brought back a silent witness in the form of a bleached Seri skull.[1]

At the close of the war Don Pascual continued the industrial development of the plains lying east of the desert border of Seriland, received new concessions in recognition of his conquest, and developed the ranchos of Santa Ana and Libertad; but the evangelical arm of his vigorous mission gradually withered. For a dozen years the Seri looked up to "El Patron" as a quasi ruler, whose approval was requisite for the ratification of chieftainship, and through him ran a slender thread of nominal fealty to the state and the republic; yet few parasites gathered about the rancho. Mashém had gone back to his clan; and when depredations were committed at Bacuachito or elsewhere and the criminals were caught, usually through Don Pascual's instrumentality, they were sometimes haled to Hermosillo for trial, and Kolusio was kept there as the official interpreter of charges and evidence and findings. [115] Sometime during the sixties a few Seri youths were coaxed to Pueblo Seri for education, but when they were instructed to cut their hair they slunk dejectedly to their temporary domicile, only to decamp during the ensuing night; again, in 1870, Kolusio was commissioned to bring in a few young people and a matron or two of the tribe, [115] and succeeded in doing so just in time to encounter an epidemic of measles, from which some died, while the others shook the dust of the pueblo from their feet forever; and this last straw, added to his alien residence and his presence at the dreaded trials, broke down the tribal toleration of Kolusio and made him an outlaw forever.

In the later seventies Don Pascual's energies began to wane, while the Seri population was waxing again; and, although the Encinas frontier was protected, raids began to recur toward Bacuachito, on the ranchos southwest of Caborca, and sometimes toward Guaymas; and the hostilities then engendered have never terminated. In the eighties Don Pascual suffered from cataract, gradually losing his sight, and his rule 648 relaxed still further; Rancho Libertad was abandoned, and a condition of armed neutrality supervened at San Francisco de Costa Rica and Santa Ana; and this condition still persists, save as occasionally modified by a crude sort of diplomacy on the part of the Seri: when blood-feud is not burning (and it is usually extinguished by the killing of an alien on the coast or some remote part of the frontier), and when no stock have

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[1] The specimen described by Dr Hrdlička, postea, p. 141.

648 been slaughtered for some months, an aged woman may be seen skulking about the mesquite clumps in sight of the rancho; if her presence is tolerated for a day or two, she approaches to beg for water and food and to receive the cast-off rags hastily forced on her nakedness by the sensitive señoras; if she deem her welcome not too chill, she erects a jacal a few hundred yards away, and there she is usually found, a morning or two later, to be accompanied by a younger matron with a child or two; and if these are tolerated, the rancheria may grow to half a dozen jacales and half a hundred persons.[1] The band may remain a fortnight or even a month; but in case of serious illness of any of their number, or of threat or punishment for petty peccadillos, or of an unusual storm, or of a brilliant meteor, or of any exceptional occurrence about the rancho, the rancheria is commonly found empty next morning. If the attachés of the rancho are indisposed to tolerate the first envoy, yet feel kindly rather than rancorous, she is merely dogged and stoned away like a depredating domestic animal from another hacienda; if the rancor of past encounters remains, the mercy accorded her is precisely that shown the predatory coyote or other feral animal from the fastnesses of the sierras—and the tribe take warning and doubtless rejoice that their loss is no greater.

175 177 [648] Any recital of the common history of the peculiarly savage Seri and the whites necessarily conveys an exaggerated notion of intimacy and mutual influence, since it emphasizes the few positive interrelations scattered along the decades of neglected nonrelation; and this is true of the Encinas régime as of earlier centuries. The great fact is that throughout their recorded history the Seri have touched civilization so slightly and so seldom that the effect of each contact was largely lost before the next supervened; and the unprecedentedly intimate contact of the Encinas régime, especially during the initial period of abnormal toleration, serves less to indicate relationship in characteristics and sympathies than to measure the breadth of the chasm between the Seri and the Mexican—a chasm not exceeded, and probably not equaled, elsewhere in America. About the middle fifties, probably every Seri above infancy and below decrepitude had seen Don Pascual and some other habitués of the rancho; they yielded to the seductions of indolent scavengering apparently more numerously than ever before; they substituted cast-off rags and barter-bought manta (plain cotton cloth) for the products of their own primitive weaving; they ate cooked food when it fell in their way; they half-heartedly adopted metal cutting implements, and sought or stole nails and hoop-iron for arrowpoints; some of them acquired a smattering of Spanish, and many of them solicited and sported Spanish names, just as they begged and flaunted tawdry handkerchiefs and beads; and they generally enjoyed mildly the ecclesiastical fiestas, and took kindly to the cross as a symbol of peace and plenty and perhaps of deeper import. Yet

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[1] A typical single jacal and the entire rancheria gathered at Costa Rica in 1894 are shown from photographs in plates x and xi.

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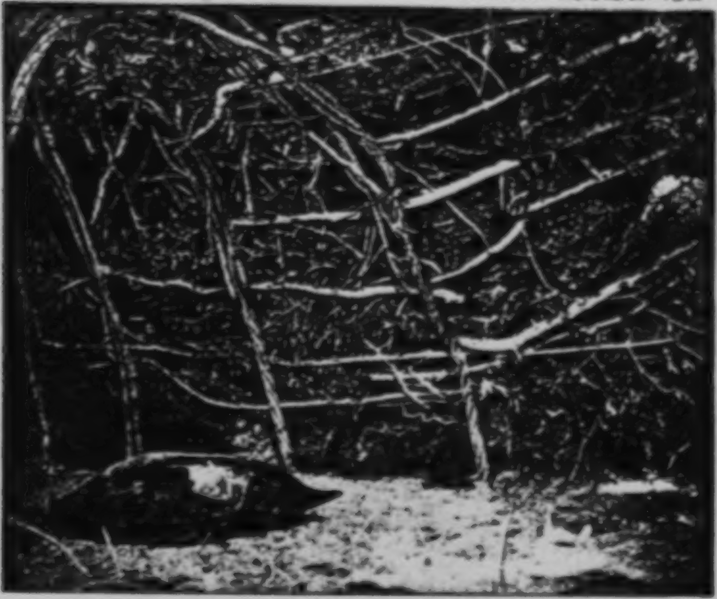
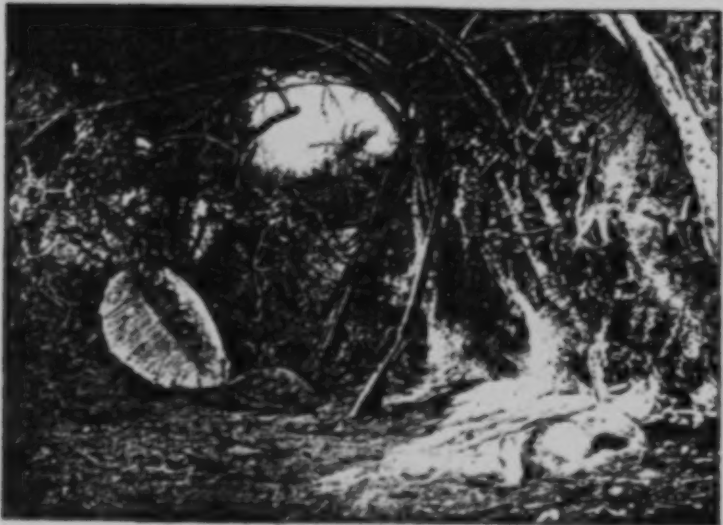


HOUSE SKELETON, TIBURON ISLAND



INTERIOR HOUSE STRUCTURE, TIBURON ISLAND

[p.114 a.]

even during this halcyon term no Seri save Kolusio and the Altar outlaw ever learned to live in a house; none but these and Mashém 175x
wore hats habitually; and, despite the fact that they often witnessed 177
and sometimes playfully or perforce participated in the processes, no Seri ever really encompassed the idea of house-building or even of making adobe. Though surrounded by horses when near the rancho, they never learned to ride nor to use the animals otherwise than for immediate slaughter and consumption; though in frequent sight of skilful ropers, they never fully grasped the idea of the riata, preferring to seize their prey with hands and teeth; though familiar with the agricultural operations of the rancho, they never turned a sod nor planted a seed on their own account; though in frequent sight of cooking, they seldom began and never finished the process with their own food; though acquainted with firearms, they continued to regard them as thaumaturgic devices, and chose the bow and arrow for actual use; though submitting to apparel on the frontier, they commonly cast away the incumbrances on returning to their lairs; and no Mexican or other Caucasian ever saw within their esoteric life—their names remained unrevealed, their hair remained sacred, their mourning for the dead was unheard save at a distance, and no alien, even unto today, has ever seen the birth of their babes, the christening of their children, the burial of their dead, or the ceremonies of their shrines. The Seri 175x
and the whites were, indeed, mutually tolerant; but, so far as concerns
mutual sympathy, the toleration was almost precisely on a par with 186
that between the ranchero and the vulture-flock that scavengers his 648
corrals—and when depredation began the toleration was of a piece with that between householders and their unwillingly domiciled rodents. It is not too much to say that the interracial mistrust and hatred of the Western Hemisphere culminates on the borders of Seriland; though the antipathy is commonly regarded by the alien tribesmen and the Mexicans as other than racial, since the Seri are felt to be hardly human—a feeling fully shared by the Seri, who undoubtedly deem themselves more closely akin to their deified bestial tutelaries than to the hated humans haunting their borders.

Even during the Encinas régime the Seri came in occasional contact 175x
with aliens on other parts of the frontier: on Hacienda Serna, the
somewhat remoter borderland outpost on the north, the relations 418
between the landholders and the Seri were analogous to those on the Encinas plains, though less acute in the ratio of relative distance. Occasionally small parties of warriors journeyed to Guaymas[1] on balsas [439]
or on foot to barter pelican-skin robes for Caucasian commodities, chiefly aguardiente and manta; still more rarely similar pilgrimages were made to the outskirts of Hermosillo; a few marauding raids were made to the ranchos lying near Cienegilla and Caborca; and a num-

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[1] The accompanying plate XII is reproduced from a photograph of a small group of Seri traders taken near Guaymas, probably during the eighties. It was kindly furnished by F. A. Ober, who purchased it in Guaymas. [126]

+ 175
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ber of ill-advised prospecting parties, coming by land or water, paid the penalty of foolhardiness. Writing about 1864, Historian Velasco recurred to the Seri to say:

> This handful of bandits, assassins, thieves, brutes [inhumanos], infinitely vile and cowardly, on February 23 last, on the Guaymas road, at the place called Huerfano, assassinated 4 unhappy women, including a girl of 9 years, and 7 men who were conducting them in a cart toward that port.

He bitterly denounced the apparent apathy of the state and federal authorities, adding:

> When it is read in history fifty years hence that a handful of murderous Ceris, certainly not more than 80 of the tribe able to bear arms, was able to domineer in the midst of their crimes with unexampled audacity on account of the debility of the government and the inhabitants, it will be regarded as a romance or a fable; for it seems impossible that in the nineteenth century such a condition of things could exist to degrade the reason, the morality, and the dignity of civilized man.

Yet a final note, apparently added in press, recorded that—

> In consequence of the last incident of the Ceris, the prefect of Guaymas, Don Cayetano Navarro, took the field, returning with 12 women and 16 children prisoners; also 2 striplings and a viejillard. He slew 9 among those who had no leader. This was on Isla Tiburon. The Indians fled thence, and are supposed to be at Tepoca.[1]

These may be considered as characteristic skirmishes attending the Encinas war. Other episodes followed, including the outbreaks of 1879, noted in part by M Pinart. Bacuachito suffered in various locally important events that will never be written: when Don Jesus Omada, a water guide to the expedition of 1895, was asked about the Seri at Bacuachito, he answered with cumulative vehemence, "They killed my father. They killed my brother! They killed my brother's wife!! They have killed half my friends!!!" As he spoke he was feverishly baring his breast; displaying a frightful scar over the clavicle, he exclaimed; "There struck a Seri arrow"; then he stripped his arm with a single sweep to reveal a ragged cicatrix extending nearly from shoulder to wrist, and added in a tone tremulous with pent bitterness, "The Seri have teeth!"

In the course of the half century from 1844 onward, the population of Sonora increased materially, and carried more than a proportionate increase in the development of agricultural and mineral resources; and, especially under the beneficent Diaz régime, the state passed from the condition of a remote frontier province into that of a well-governed commonwealth. Naturally this progress carried the Caucasian element, including that of blended blood, farther and farther away from the nonprogressive Seri; and thereby the horror and detestation awakened by the very utterance of the name of the lowly tribe were intensified beyond description or ready understanding. The traditions of arrow poisoning were kept alive, and, doubtless, growing; the recitals of carrion eating were repeated, and possibly—just possibly—magnified beyond the reality; the accounts of offense and defense by nails and

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[1] Boletín de la Sociedad Mexicana de Geografía y Estadística, tomo [illegible], 1862, pp. [illegible].

[113]

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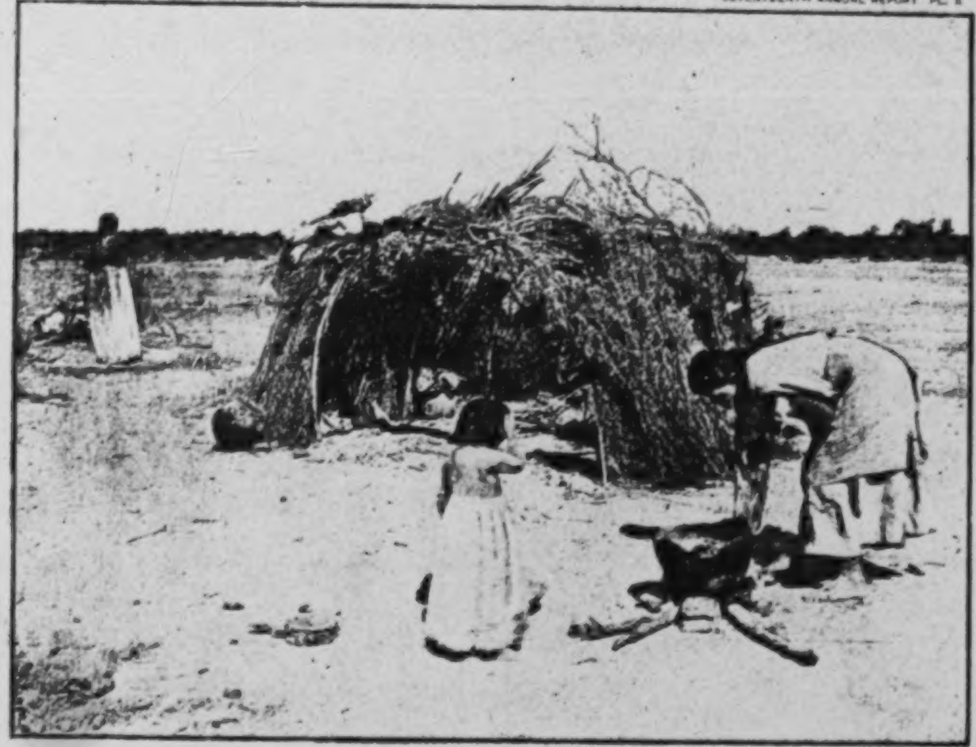
[Facing p. 117]



TYPICAL SERI HOUSE ON THE FRONTIER

teeth (such as that of Jesus Omada) passed from mouth to mouth until—incredible as it may seem—the more timid Sonorenses stood in greater dread of these natural weapons of the Seri than of their brutal clubs and swift-thrown missiles, or even of their poisoned arrows; while traditions of cannibalism came up and received such general credence that the current items of Seri outrages, both in local gossip and in the Mexican and American press, customarily recounted savage butcheries ending with gruesome feastings on the raw or slightly cooked flesh of the victims. The shuddering antipathy felt for the perpetrators of these inhumanities even a thousand miles away increased toward their frontier, as light toward its source; the dread was deepened by the failure of punitive expeditions sent out again and again only to be balked by waterless sand-wastes or wrecking tiderips; and in 1894 and 1895, at least, the horror of the Seri was a daily and nightly incubus on half the citizens of Hermosillo and the tributary pueblos and ranchos, and a thorn in the flesh of the state officials. 175 X 648

The external history of the Seri since the spring of 1894 is fairly known, both through the direct researches and through press reports, and would seem to be typical. This era may be assumed to open with the arrival on Tiburon's shores of the sloop *Examiner*, carrying two San Francisco newspaper writers, Robinson and Logan, with two assistants, Clark and Cowell. The to-have-been-expected happened duly, save that two of the party escaped, and on reaching Guaymas advertised the disaster through correspondence and the press. Several of the accounts indicated that the two victims were not only slain but eaten, and various plans were laid in California, Arizona, and Sonora for the recovery of the bones[1]—as if, forsooth, the omnivorous and strong-toothed Seri spared anything save scattered teeth and split sections of the longer shafts of skeletons the size of those of *Homo sapiens*. While in Guaymas the two survivors set up claims for indemnity, which initiated international correspondence and inquiry into the details of the affair. These details are indicated, in sufficient fulness for present purposes, in a formal communication incorporated in the international correspondence, viz: 648

SMITHSONIAN INSTITUTION,
BUREAU OF AMERICAN ETHNOLOGY,
Washington, December 14, 1894.

SIR: Early in November I visited the Seri tribe of Indians, inhabiting Tiburon island in the Gulf of California and an area of several thousand square miles of the adjacent mainland in Sonora, Mexico. The visit was for the purpose of making collections under your authority as Secretary of the Smithsonian Institution; but I availed myself of the opportunity for obtaining additional information relating to the customs, habits, and history of the tribe. In addition to my own party I was accompanied by Señor Pascual Encinas, a prominent citizen of Hermosillo, and [121] [115]

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[1] A number of Californians and Arizonians, especially M. M. Rice, of Phoenix, intimated a strong desire to join the 1895 expedition of the Bureau of American Ethnology for the express purpose of personally ascertaining the fate and seeking the remains of Robinson, who was extensively known in southern California and southwestern Arizona.

648 owner of several ranchos adjacent to, and one within, the territory claimed by the Seri Indians; also by Señor A. Alvemar-Leon of Hermosillo, a young Mexican gentleman educated in the United States. [115] For Señor Encinas the Seri Indians have the highest regard, and his kindly motive in accompanying the party was to facilitate friendly intercourse with the Indians; Señor Alvemar-Leon acted as Spanish-English interpreter, and one of the tribe who speaks Spanish [Mashém] acted as the Seri interpreter.

One of the subjects of inquiry of the Indians related to the alleged killing of two Americans by the Seri Indians on Tiburon island during last spring at a date not definitely known either to the Indians or to myself. At first the Indians were [123] indisposed to convey information on the subject, but after receiving presents from Señor Encinas and myself, and friendly assurances from the former, the interpreter for the tribe confessed the crime and detailed the circumstances, denying, however, that any of the Indians present at the place of conference (Rancho de San Francisco de Costa Rica, 17 leagues west-southwest of Hermosillo and near the coast) participated.

According to the first account given through the Indian interpreter, the Indians on the island saw a small vessel approach the shores of the island, and saw four men land therefrom in a small boat. The spokesman among the strangers made inquiry, chiefly by signs, as to whether game was abundant in the interior of the island, and was by signs answered in the affirmative by the chief of the tribe, who displayed a letter of authority from the state officials at Hermosillo. Then the strangers divided, two remaining on the shore by the small boat, while the spokesman and another, accompanied by several Indians, started toward the interior of the island. When they were some distance away—the account continues—some of the Indians remaining on shore indicated by signs a desire to borrow the rifle of one of the two men on the beach, and after some parley the rifle was turned over to them; then the Indians desired also to borrow the small boat in which the party of white men had landed, and after one of the two men remaining on the shore was put aboard the vessel, this, too, was placed in the hands of the Indians. Thereupon several of the Indians entered the small boat, carrying the white man's rifle, and rowed around a headland a short distance away. Passing this point they landed and a part of them ran quickly into the interior in such direction as to intercept the course of the white men. There they lay in wait until the strangers appeared, when they shot the spokesman, killing him almost instantly. On this the second white man cried out for help, whereupon he too was shot and wounded, and then (according to the first account) ran away and concealed himself in the bushes and was seen no more. The Indians who had borrowed the boat then went back to the shore, and reentered the boat with the intention of returning and capturing the fine vessel of the strangers; but as they approached the vessel, being at the time quite near the shore, the man on board arose suddenly with a gun pointed toward them and shouted, whereupon they dropped the borrowed gun and, leaping from the boat, ran away among the mesquite bushes, all escaping unhurt. The white man on the beach then, as the account runs, leaped into the boat, and, recovering his gun, rowed to the vessel and got aboard, when the two men at once made sail and escaped down the bay.

The foregoing account was given to Señor Encinas alone by the Indians through 124 their interpreter, and was afterward conveyed to me through Señor Alvemar-Leon. Both of us recognized the incongruity with the character of the Seri Indians of 648 that part of the narrative relating to the wounding and escape of the second man, and Señors Encinas and Leon and myself sought to impress the improbability of the account on the interpreter. Subsequently the Indians, through their interpreter, conveyed to Señor Encinas a modification of the account (after adhering to the first version for twenty-four hours), which agreed in all essential respects with the first, excepting the supplementary statement that some of the Indians (but neither the party who accompanied the white men nor those who followed in the boat) ran after the wounded man, caught him, shot him again—whereupon he again cried out—and

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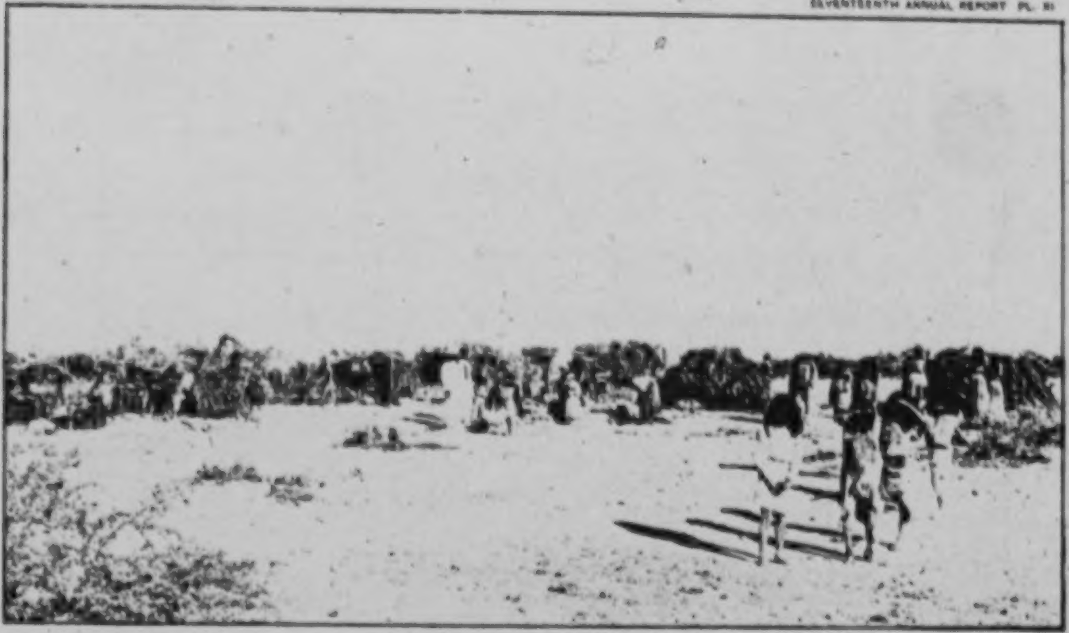

OCCUPIED RANCHERIA ON THE FRONTIER

[FACING p. 119]

then killed him with stones. This modified account, also, Señor Encinas duly con- 124
veyed to me.

Still later, in collecting linguistic material through the Seri interpreter with the 648
assistance of Señor Alvemar-Leon, I recurred to the subject incidentally (or at least
ostensibly so) on two or three occasions, partly with the view of verifying or dis-
proving the current report that the men were eaten by the Indians; and since the
first distrust on the part of the interpreter and the companions (by whom he was
commonly surrounded) had worn off, the questions were answered freely and with
apparent truth. In brief, the information gained in this way was a repetition in
general terms of the statement of the killing of both men; but the responses indi- [266]
cated (1) that the Indians are not cannibals, (2) that they do not eat any portion or
portions of the body of an enemy slain in war, (3) that they do not eat human flesh in a
sacrificial way, and (4), specifically, that they did not eat the flesh of the two white
men killed last spring. I am disposed to give credence to all of these statements.

Señor Encinas informed me that for a long time after the reputed killing of the 648
two Americans on the island the Seri were exceptionally shy and were seldom seen
on the mainland; that the first representatives of the tribe to appear were one or
two old women who came to his rancho with much trepidation; that these repre-
sentatives being not ill-treated, a man appeared, who was also well treated, and
that still later other members of the tribe appeared, though it was only a few days
before our visit that any considerable body of the Seri Indians showed themselves
at their favorite mainland haunt on his rancho. It was his first communication
with the Indians since the killing, and, both he and they agreed, the first confession
of the crime outside of their own tribe.

While in Sonora various conflicting accounts of the affair were given me. One, to 115
which I was disposed to attach credence by reason of the character of my informant
and his explanation of the circumstances under which the information was gained, 124
was given me (just before the visit referred to above) by ex-Consul Forbes, of Guaymas. 648
This account corresponds in all essential details with that conveyed to my party by
the Indians, except that, according to Mr Forbes' account, the survivors were alto-
gether unarmed after the borrowing of the rifle by the Indians, and that when the
man in the boat arose suddenly and shouted he pointed at the Indians not a gun but
a stick, in the hope of deceiving them thereby, as he was fortunate enough to do.

It may be added that the Seri Indians are at the same time the most primitive and 181
the most bloodthirsty and treacherous of the Indians of North America, so far as my
knowledge extends; also that their character is well known throughout Sonora, and 648
indeed generally throughout Mexico, Arizona, and the southern part of California.
I was assured by the acting governor of Sonora and by the prefect of Hermosillo that
it would be little short of suicide for even a Mexican official to visit these Indians
or land on their island without an armed guard. Through conference with the
Indians, also, I learned that any white man, Mexican, or Indian of another tribe com-
ing in contact with them is killed without the slightest compunction, unless they
are restrained by fear. Accordingly I am satisfied that the character of the Seri
Indians is quite as bad as the unsavory reputation they have acquired throughout
the Southwest.

It should be observed that while the Indians were unable to give the names of the 124
men killed, their description of men and vessel agreed exactly with those of the
newspaper correspondent Robinson and his companion, and with the sloop *Examiner*; 648
and Mr Forbes' information was obtained direct from the survivors of the expedition
of which Mr Robinson had charge. There can then be no doubt that it was Mr
Robinson and his companion who were killed by these Indians, and whose killing
was confessed by them, as set forth above.

With great respect, your obedient servant,

W J McGee,
Ethnologist in charge.

Honorable S. P. Langley,
Secretary of the Smithsonian Institution.

648 On first learning of the incident, months before the diplomatic correspondence began, the state and federal authorities promptly adopted vigorous punitive measures. A vessel carrying a force of federal troops was dispatched from Guaymas and a body of state troops were sent from Hermosillo with instructions to meet on the coast and capture the criminals at any cost, even to the extermination of the tribe if resistance was offered. But like so many others, the expedition failed; the horses of the land party were stalled in the sands and burrow-riddled plains, the vessel was harassed by storms and tidal currents, and the landing boats were swamped by the surf, while the Indians merely fled at sight of the invaders toward inaccessible lairs or remote parts of their territory; and when the water was gone and men and animals were at point of famishing, the forces retired without so much as seeing a single Seri.

During the ensuing autumn the tribe, having quenched their blood-feud in alien blood, turned toward peace, and sent a matron of the Turtle clan, known as Juana Maria, to Costa Rica—i. e., Rancho de San Francisco de Costa Rica—where she was gradually followed by younger matrons and children, then by youths, and finally by warriors (after the fashion of Seri diplomacy) to the aggregate number of about sixty.
124 Here they were found by the first expedition of the Bureau of American Ethnology, in November, 1894; and here, under the still strong influence of the venerable Don Pascual, supplemented by small gifts and persistent pressure, they gradually "gave their language", submitted to extensive photographing, confessed specifically to the Robinson killing, and yielded up nearly the whole of their portable possessions in the way of domestic implements and utensils, face-painting material, pelican-skin robes, snake skin necklaces, etc.

648 With the return of the Bureau party to Hermosillo the Indians became restive and soon withdrew beyond the desert. In the course
721 of the ensuing winter a group returned to the neighborhood of Costa Rica, where, by aid of strategy, seven warriors (including some of those seen at the rancho in the preceding November) with the families of four, were arrested, taken to Hermosillo, tried, and, according to oral accounts, banished. Irritated by this action, and connecting with it the visit of Don Pascual and the strangers desiring their language and sacred things, the clans resumed the warpath, displaying special animosity toward the residents of Costa Rica. There were a few minor skirmishes; then, at the instance of the state officials, a number of Papago Indians, who are feared by the Seri beyond all other enemies, were domiciled at the rancho, where their mere presence proved a sufficient protection.
648 Meantime, according to apparently trustworthy press accounts, two small exploring parties entered Seriland; the first consisted of seven prospectors, who kept well together until about to leave the territory, when one of their number fell behind—and his companions saw him no more, though they carefully retraced their trail beyond the

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BUREAU OF AMERICAN ETHNOLOGY SEVENTEENTH ANNUAL REPORT PL. [illegible]

GROUP OF SERI INDIANS ON TRADING EXCURSION

[FACING P. 121]

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

point at which he had stopped; the other was a German naturalist-prospector with two mozos (servant-companions), purporting to hail from Chihuahua, who started across the delta-plain of Rio Bacuache and Desierto Encinas with saddle animals, and never reappeared. 648

Then came the second expedition of the Bureau of American Ethnology, to which several Papago domiciled at Costa Rica were attached as guards. While the party were at the rancho the day before the first entrada into Seriland via Barranca Salina, a party of vaqueros from Rancho Santa Ana tended a herd of stock to the barranca for water; one of the animals strayed behind a dune, and the vaqueros, following its trail, came on a small band of Seri already devouring the entrails, and attacked them so vigorously that they escaped only by outrunning the horses, leaving behind all their unattached possessions, including a bow and quiver of arrows and an ancient and nonusable army rifle. This incident, albeit typical, was untimely, and doubtless aided in rendering the Indians too wild to permit communication with the aliens during the ensuing weeks spent in their territory. 123 648

After the withdrawal of this expedition the Seri resumed their range over the borderland plain, with the evident intention of avenging the insult of the invasion. There were a number of skirmishes, in which some of the Papago guards of the 1895 expedition were wounded and had horses killed under them, though they did customary execution on the worse armed Seri; and extensively published press items indicate that, toward the end of January, 1896, a party of five gold prospectors landed on Tiburon, whence one escaped. 648 721

A well-attested episode ensued toward the end of 1896: Captain George Porter and Sailor John Johnson spent the later part of the summer in cruising the coasts of the Gulf, collecting shells, feathers, and other curios in the small sloop *World*. About the end of October they apparently anchored in Rada Ballena; and a day or two later Captain Martin Mendez, of Guaymas, in charge of the schooner *Otila*, being driven up the gulf and into Bahia Kunkaak by storms, came on a horde of Seri looting Porter's vessel. The episode received publicity on Mendez's return to Guaymas; United States Consular Agent Crocker instituted inquiries, and Governor Corral sent a force to Costa Rica, where, after some delay, a parley was held with a strong band of Seri under the chiefship of "a seven-foot warrior named El Mudo (The Mute), . . . so called for his reticence of speech."[1] The testimony obtained at the parley and from Captain Mendez indicates that Porter and Johnson landed, or at least approached the shore, probably in a small boat; that they were met by a shower of arrows, under which Johnson immediately fell, while Porter defended himself with a shot- 648

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[1] San Francisco Chronicle, October 19, 1896, p. 3. The details of the episode, including the correspondence of Consular Agent Crocker, were printed in the newspapers of San Diego (the place of residence of Porter and Johnson), as well as in those of San Francisco and other cities; and there was considerable correspondence concerning the matter with the State Department at Washington. Some reports recount that the bodies of Porter and Johnson were torn to fragments and devoured, but these details naturally lack confirmation. El Mudo's portrait appears in plate XIII. [113]

648 gun, slaying five of the Seri before he was himself transfixed; that the vessel was then looted, and that Mendoz and his crew were prevented from landing and apparently driven off by the Seri force. In the course of the parley the state officials "demanded the surrender of the ringleaders in the massacre", with the alternative of "regarding the whole tribe as guilty and punishing them accordingly"; but El Mudo, evidently holding the invasion of the island as the initial transgression and deeming the loss of the tribe under Porter's marksmanship as more than commensurate with the Caucasian loss, peremptorily ended the conference and returned to the island. Vigurous efforts were made to pursue the tribesmen beyond their practically impassable frontier, with the usual product of ruined horses and famished riders. Then the episode died away in an armed neutrality strained somewhat beyond the normal. Meantime the Papago guards remained at Costa Rica. "They are continuously on the lookout for these Seris, and once or twice have killed a stray one or two."[1]

Both before and after the Porter-Johnson episode schemes were devised by various parties, chiefly Californians, for obtaining concessions covering Tiburon and its resources, most of these schemes involving plans for the extermination of the Seri; and press accounts indicate that a concession covering the islands of the gulf above the latitude of 29° (i. e., including about half of Isla Tiburon) was granted to an American company of much distinction. It would appear from numerous news items that representatives of the company sought to land on Tiburon, where they were first cajoled with offerings of food, afterward found to be poisonous, and later driven off by an enlarged force of naked archers. A recent publication bearing some official sanction announces that "Mr W. J. Lyons, of Hermosillo, Sonora, has secured a concession for the exploration of the island and in November of this year will fit out an expedition for that purpose."[2] The various movements are significant as indices of current opinion and official policy with respect to the tribe.

On the whole, the later episodes are natural sequels of the eventful and striking earlier history of the Seri; and they can only be interpreted as pointing to early extinction of one of the most strongly marked and distinctive of aboriginal tribes.

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[1] The quotations are from the account of T. H. Silsbee, of San Diego, prepared on his return from a visit to Costa Rica.

[2] El Estado de Sonora, Mexico. Sus Industrias Comerciales, Mineras y Manufactureras. Obra Publicada bajo los Auspicios del Gobierno del Estado. Obra Ilustrada, Octubre de 1897. By J. R. Southworth, Nogales; p. 72.

1: McGee E-5 (1894-1895)1896 NU31 Seri NU31

TRIBAL FEATURES

Definition and Nomenclature

According to Mashém and the clanmother known as Juana Maria, the proper name of the tribe known as Seri is *Kunkaak* (the first vowel obscure and the succeeding consonant nasalized; perhaps *K'n-kaak* or *K'ng-kaak* would better express the sound). According to Kolusio, as rendered by M. Pinart, the Seri term for people or nation is *kom-kak*, while the Seri people are designated specifically as *Kmike*, this designation being practically equivalent phonetically (and doubtless semantically) to Sr Tenochio's general term for women, *kmamkij*. Mashém was unable or unwilling to give the precise signification of the tribal appellation used by him, merely indicating Juana Maria and one or two other elderwomen squatting near as examples or types; but comparison of the elements of the term with those used in other vocables affords a fairly clear inkling as to its meaning. The syllable *kun* (or *k'n*, *kon*, *kom*, etc.) certainly connotes age and woman, and apparently connotes also life or living (*kun-kaie*=an old woman, McGee; *i-kom*=a wife, *ekom*=alive, Bartlett; *kikkam*=a wife, *kmam-kikamman*=a married woman, *Yak kom*=Yaqui tribe, Pinart; *kon-kabre*=an old woman, Tenochio), the forms being distinct from the word for woman (*kmaam*, McGee; *ik-e-mam*, Bartlett; *kmam*, Pinart and Tenochio) and widely different from the term for man (*kà-tãmm*, McGee; *ik-e-tam*, Bartlett; *ktam*, Pinart; *tam*, Tenochio) with its several combining variants; there are also indications in numerous vocables that it connotes person or personality. On the whole, the syllable appears to be an ill-formulated or uncrystallized expression, denoting at once and associatively (1) the state of living or being, (2) personality, (3) age or ancientness (or both), and (4) either femininity or maternity (much more probably the latter), this inchoate condition of the term being quite in accord with other characters of the Seri tongue, and frequently paralleled among other primitive languages. The syllable *kaak* (or *kak*, and probably *kok*, *koj*, *kekch*, etc.) would seem to be a still more vague and colloidal term, despite the fact that it is used separately to designate the fire-drill. There are fairly decisive indications that it is composite, the initial portion denoting place and the final portion perhaps more vaguely connoting class or kind with an implication of excellence, both elements appearing in various vocables (too numerous to quote). On the whole, *kaak* would appear to be a typical egocentric or ethnocentric term, designating and dignifying Person, Place, Time,

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101 196 and Mode, after the manner characteristic of primitive thought;[1] so that it may perhaps be translated "Our-Great-(or Strong-)Kind-Now-Here". The combination of the two syllables affords a characteristically colloidal connotation of concepts, common enough in primitive use, but not expressible by any single term of modern language; in a descriptive way the complete term might be interpreted as "Our-Living-Ancient-Strongkind-Elderwoman-Now-Here," while with the utmost elision the interpretation could hardly be reduced beyond "Our-Great-Motherfolk-Here" without fatal loss of original signification. It should be noted that the designation is made to cover the animals of Seriland (at least the zoic tutelaries of the tribe) and fire as well as the human folk.

101 562 The proper tribe name is of no small interest as an index to primitive thought, and as an illustration of an early stage in linguistic development. It is significant, too, as an expression of the matronymic organization, and of the leading rôle played by the clanmothers in the simple legislative and judicative affairs of the tribe; and it is especially significant as an indication of the intimate association of fire and life in primitive thought.

101 The designation "Seri", with its several variants, is undoubtedly an alien appellation, and neither Mashém nor Kolusio could throw light on its origin or meaning, though they did not apparently regard it as opprobrious. Peñafiel describes it as an Opata term; and Pimentel's Opata vocabulary[2] (extracted from the grammar and dictionary compiled by Padre Natal Lombardo) indicates its meaning satisfactorily, albeit without special reference to the tribe. The key term in this vocabulary is "*Sérerài*, velocidad de la persona que corre." The accent over the first vowel serves to indicate prolongation, so that term and definition may be rendered, literally, *se-rerài*, speed of the person who runs. Analysis of the term shows that the essential factor or root is that introduced elsewhere in the same vocabulary as "*Ere*, llegar." Now, "llegar" is a protean and undifferentiated Spanish verb neuter, without satisfactory English equivalent; it may be interpreted as arrive, reach, attain, fetch, endure, continue, accomplish, suffice, ascend, or mount to, while as a verb active and verb reflective its equivalents are approach, join, proceed a little distance, unite, etc; it may be said to imply movement or process with a centripetal connotation—i. e., a connotation antithetic to that of the expressive irregular verb "ir" in its protean forms, including the ubiquitous and ever present "vamos" (an American slang equivalent of the Castilian verb "llegar" in certain of its phases is the strong interjectory phrase, "get together"). The prefix *se* is merely an intensive, running not merely through the Opata, but throughout various tongues of the Piman stock. In his extensive vocabulary of the Pima and Papago Indians of Arizona (1871),[3] Captain

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[1] Cf. The Beginning of Mathematics, in the American Anthropologist, new series, vol. 1, 1899, p. [illegible].

[2] Vocabulario Manual de la Lengua Opata, por Francisco Pimentel: Boletin de la Sociedad Mexicana de Geografia y Estadistica, tomo [illegible], [illegible], pp. [illegible].

[3] In the archives of the Bureau of American Ethnology.

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F. E. Grossmann defines the term "*ae*, very, ad. (prefix)", and over a hundred and fifty of his terms illustrate the use of this adjectival or adverbial prefix as an undifferentiated yet vigorous intensive (*e. g.*, *af*, female or woman, *ae-af*, a lady—great or grand woman; *e'k*, high or height, *ae-e'k*, highmost); and in the Pimentel vocabulary this signification is attested by several other terms (*e. g.*, "*Sereroi*, paso menudo y bueno"). Finally, the intercalated consonant *r* is a common participial element in the Piman, while the suffix *ai* is a habitual assertive termination, as shown by various terms in the Pimentel and other vocabularies. Dropping this termination, the expression becomes *ae-erer*, or—without the nonessential participial element—*ae ere*, signifying (so far as can be ascertained from the construction of the language) "moving", or "mover", qualified by a vigorous intensive.[1] To one familiar with the strikingly light movement characteristic of the Seri—a movement far lighter than that of the professional sprinter or of the thoroughbred "collected" by a skilful equestrian, and recalling that of the antelope skimming the plain in recurrent impulses of unseen hoof-touches, or that of the alert coyote seemingly floating eerily about the slumbering camp—this appellation appears peculiarly fit; for it is the habit of the errant Seri to roam spryly and swiftly on soundless tiptoes, to come and go like fleeting shadows of passing cloudlets, and on detection to slip behind shrub or rock and into the distance so lightly as to make no audible sign or visible trail, yet so fleetly withal as to evade the hard-riding horseman. The Seri range over a region of runners; the Opata themselves are no mean racers, since, according to Velasco and Bartlett, "In twenty-four hours they have been known to run from 30 to 50 leagues";[2] and, according to Lumholtz, their collinguals, the Tarahumari, or "Counting-Runners", are named from their custom of racing,[3] and display almost incredible endurance:

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> An Indian has been known to carry a letter from Guazapares to Chihuahua and back again in five days, the distance being nearly 600 miles. In some parts where the Tarahumaris serve the Mexicans they are used to run in the wild horses, driving them into the corral. It may take them two or three days to do it, sleeping at night and living on a little pinole. They bring in the horses thoroughly exhausted, while they themselves are still fresh. They will outrun any horse if you give them time enough. They will pursue deer in the snow or with dogs in the rain for days and days, until at last the animal is cornered and shot with arrows or falls an easy prey from sheer exhaustion, its hoofs dropping off.[4]

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[1] The latter form (*ae ere*) corresponds precisely with the current Papago pronunciation of the term, though none of the various Papago informants consulted were able to interpret the expression; indeed, they simply relegated it to the category of "old names" which they deemed it needless to discuss. An archaic form of orthography, noted in the synonymy (pp. 128-130), is Heri, which suggests the same sounding of the initial sibilant.

[2] "From 105 to 150 miles." Bartlett, Personal Narrative, vol. I, p. 445.

[3] Memoirs of the International Congress of Anthropology, Chicago, 1894, p. 294. In a letter to Mr F. W. Hodge, under date of September 11, 1898, Dr Lumholtz says: "After renewed investigation I have come to another opinion regarding the meaning of the tribal name *Tarahumari*. This word is a Spanish corruption of the native name 'Ralamari'. Though the meaning of this word is not clear, that much is certain that *rala* or *tara* means 'foot', and I therefore take it that we must be at least approximately correct when we say that the word signifies 'foot-runner'."

[4] American Anthropologist, vol. VIII, 1895, p. 61.

1: McGee E-5 ([illegible]-1895)1898 NU31 Seri NU31

171 481 The Papago, of the same region and linguistic stock, have a racing game in which a ball of wood or stone caught on the foot is thrown, followed, and thrown again until the two or more rival racers have covered 20 to 40 miles in the course of a few hours; and their feats as couriers and trailers are quite up to those of the Opata. Yet among all these tribes, and among the Mexicans as well, the Seri are known as *the* runners par excellence of the Sonoran province; and it is but natural that their astounding swiftness and lightness of foot should have brought them an appellation among contemporaries to whom these qualities peculiarly appeal.

101 Accordingly, both derivation and connotation give meaning to the name, and warrant the rendering (much weakened by linguistic infelicities) of "spry" or "spry-moving", used in substantive sense and with an intensive implication.

101 114 175 197 The chronicles of the tribe, especially those written during the seventeenth and eighteenth centuries, indicate that the alien designation was applied loosely and with little appreciation of the tribal organization, just as was the case elsewhere throughout the continent. Gradually the chroniclers took cognizance of intertribal and intratribal relations, and introduced various distinctions in nomenclature expressing tribal or subtribal distinctions of greater or less importance. One of the earliest distinctions was that between the Seri and the Tepoka, and this distinction has been consistently maintained by nearly all later authorities, despite the commonly accepted fact (brought out most authoritatively by Hardy) that the tongues of the tribes are substantially alike. Another early distinction was that made between the Seri and the Guayma; it was based primarily on diversity of habitat and persistent enmity, though all the earlier authorities agreed, as well shown by Ramirez, that the tongues were essentially identical. The distinction has been maintained by most authorities and strongly emphasized by one (Pinart, as quoted by Bandelier), and since the Guayma are extinct, and hence beyond reach of direct inquiry, the early interpretation of tribal relation must be perpetuated.[1] Still another distinction was that made between the Upanguayma and the Guayma, and inferentially the Seri also; although the grounds for this distinction were not specifically stated, it seems to have grown out of diversity in habitat merely; but there were clear implications that the tribe or subtribe was affiliated linguistically with the Guayma, and hence with the Seri, and 101 114 175 this assignment has been adopted by leading authorities, including Pimentel and Orozco. Among the earlier distinctions based on indus-

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[1] In view of the clear indications, both a priori and a posteriori, that the latest Guayma survivors must have taken the language of the Pimas (Yaqui) tribesmen with whom they found refuge, and in view of his failure thus far to present his data for public consideration, M Pinart's inference that the Guayma belonged linguistically to the Piman stock can hardly be admitted to hold against the specific statements of the Jesuit missionaries and such accomplished inquirers as Ramirez and Pimentel.

trial factors was the setting apart of the Salineros, or Seri Salineros; 101 yet this distinction, fortuitous and variable at the best, expressed no 114 essential character and has not been maintained. A much later distinction was that between the Seri and Tiburones, emphasized by 175x Mühlenpfordt and exaggerated by Buschmann; but there seem to have been no better grounds for it than misapprehensions naturally attending a slowly crystallizing nomenclature. In any event it has not been maintained.

At several stages the chroniclers coupled the Seri with other tribes, on various grounds: in the eighteenth century they were thus combined with the Pima, the Piató, and especially the Apache tribes. In the earlier half of the nineteenth century they were frequently coupled in similar fashion with the Pima and Apache tribes, and in the later half of the nineteenth century, and even in its last lustrum, they have been similarly combined with the Yaqui. The later combinations seem to explain the earlier: the Yaqui outbreaks withdraw portions of the arm-bearing population from the Seri frontier, and the marauders take advantage of the withdrawal so regularly that a Yaqui scare is invariably followed by a Seri scare, and hence the two warlike tribes are constantly associated in the minds of the Sonoreneses as synchronous insurrectionists; and scrutiny of the earlier chronicles indicates that most of the so-called combinations of former times were of similar sort.

On putting the chronicles together, it seems clear that the term "Seri" 101 was originally of lax application, but was gradually restricted to the tribe inhabiting Tiburon and ranging adjacent territory, including the collingual but inimical Guayma and Upanguayma, and also the collingual and cotolerant Tepoka; and that the various Piman tribes, as well as the Apache, were always distinct, and commonly if not invariably inimical.

The ethnic relations of the Seri people attracted early and repeated 114 attention. Humboldt gave currency, albeit not unquestioningly, to a 174 supposed Chinese or related Oriental affiliation; Hardy noted the similarity of the Seri tongue to that of the Patagonians; Lavandera classed the language as Arabic; Stone and Bancroft circulated a supposed identification of the speech with the Welsh; Ramirez, and more especially Pimentel, narrowed the field of affiliation to Mexico and defined the tongue as distinct; Orozco y Berra, and more especially Malte-Brun, slightly reextended the field and suggested affiliation with the Caribs; while Herzog, Gatschet, and Brinton reextended the field in another direction and saw, in a vocabulary obtained from a Seri scion but alien thinker, similarities between the Serian and Yuman tongues. The [197] recent researches tend strongly to corroborate the evidence collected and the conclusions reached by Ramirez and Pimentel; for the somewhat extended comparisons between the Serian and neighboring languages (introduced and discussed in other paragraphs) indicate that the

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114 174 [197] Seri tongue is distinct save for two or three Cochimi or other Yuman elements, which may be loan words such as might readily have been obtained through the largely inimical interchange of earlier centuries described by Padre Juan Maria de Sonora and other pioneer observers—certainly the slight and superficial similarities with other tongues of the region seem insufficient to meet the classific requirement of suppositions descent from "a common ancestral speech".[1] Accordingly 101 197 the group may be defined (at least provisionally) as a linguistic family or stock, and may be distinguished by the family name long ago applied by Pimentel and Orozco, with the termination prescribed in Powell's fifth rule,[2] viz, *Serian*. Conformably, the classification of the group would become—

Serian stock, comprising—
    Seri tribe, including Tiburones and (certain) Salineros;
    Tepoka tribe;
    Guayma tribe;
    Upanguayma tribe.

Naturally this classification is provisional in certain respects. It is 101 114 197 little more than tentative in so far as the Tepoka are concerned, since no word of the Tepoka tongue has ever been recorded, so far as is known, and since the tribe is still extant and within reach of research; it must be held provisional also in respect to the separateness of the stock, which may be found in the future to be affiliated with neighboring stocks, though the effect of the more recent and more critical researches in eliminating supposed evidences of affiliation points in the opposite direction. The arrangement is in some measure provisional also with respect to the relations between the long-extinct Guayma and Upanguayma and the type tribe, especially since contrary suggestion has been offered in terms implying the existence of unpublished data; yet the presumption in favor of the critical work by Ramirez, Pimentel, and Orozco is so strong that practically this feature of the classification may be deemed final.

No attempt has been made to render the tribal synonymy exhaustive, 101 [175 though search of the records has incidentally brought out the more important synonyms, as follows:

Seri Tribe

Ceris—1826; Hardy, Travels, p. 86.
Ceri—1875; Pimentel, Lenguas Indigenas, tomo II, p. 229.
Ceris—1745; Villa-Señor, Theatro Americano, p. 391.
Ceris Tepocas—1850; Velasco, Noticias Estadisticas, p. 132.
Heri—1854; Buschmann, Die Spuren der aztekischen Sprache, p. 221.
Heris—1645; Ribas, Triumphos de Nuestra Santa Fee, p. 358.
Hequsee—1720 (?); Van der Aa, map.

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[1] Indian linguistic families, by J. W. Powell, in Seventh Annual Report, Bureau of Ethnology, 1891, 8th clause, p. 11.
[2] Ibid., p. 16.

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Saes—1896; San Francisco Chronicle, January 28.
Se-ere—Etymologic form.
Sereis—1844; Mühlenpfordt, Republik Mejico, Band I, p. 210.
Seri—1754; [Ortega], Apostólicos Afanes, p. 264.
Seris—1694; Mange, Resumen de Noticias (Documentos para la Historia de Mexico, série 4, tomo I, p. 250).
Seri Salineros—1842; Alegre, Historia de la Compañía de Jesus, tomo III, p. 117.
Seris Salineros—1694; Mange, Resumen de Noticias (Documentos, série 4, tomo I, p. 221).
Serys—1754; [Ortega], Apostólicos Afanes, p. 267.
Seres—1848; [illegible], The Races of Man, p. 223.
Siris—1883; Gatschet, Der Yuma Sprachstamm, p. 128.
Zeris—1731? Dominguez, Diario (MS.).
Kmike—1879; Pinart, MS. vocabulary.
Komkak—1879; Pinart, MS. vocabulary.
Kunkaak—1896; McGee and Johnson, "Seriland", Nat. Geog. Mag., vol. VII, p. 125.
Salineros—1727; Rivera, Diario y Derrotero, l. 844–1519.
Tiburones—1799; Cortez (Pacific Railroad Reports, vol. III, p. 122).
Tiburones—1792; Arricivita, Cronica Seráfica, segunda parte, p. 436.
Tiburon Ceris—1829; Hardy, Travels, p. 299.

Tepoka Tribe

Tepocas—1847; Disturnell, Mapa de los Estados Unidos de Mejico, New York.
Tepoca—1748; Villa-Señor, Theatro Americano, p. 392.
Tepoca Ceris—1829; Hardy, Travels, p. 299.
Tepocas—1748; Villa-Señor, Theatro Americano, p. 391.
Tepocas—1865; Velasco, Bol. Soc. Mex. Geog. y Estad., tomo XI, p. 125.
Tepoka—Phonetic form.
Tepopa—1875; Dewey, map.
Tepoquis—1757; Venegas, Noticia, tomo II, p. 243.
Tepocas—1702; Kino, map (in Stöcklein, Der Neue Welt-Bott).
Tepoquis—1701; Kino, map (in Bancroft, Works, vol. XVII, 1889, p. 360).

Guaymas Tribe

Baymas—1754; [Ortega], Apostólicos Afanes, p. 377.
Gayama—1826 (?); Pike (Balbi), (in Pimentel, Lenguas Indígenas, tomo II, p. 231).
Guaima—1861; Buckingham Smith, Heve Grammar, p. 7.
Guaimas—1702; Kino, map (in Stöcklein, Der Neue Welt-Bott).
Guayamas—1757; Venegas, Noticias, tomo II, p. 79.
Guayma—1701; Juan Maria de [illegible], Report (Documentos para la Historia de Mexico, série 4, tomo V, p. 154).
Guaymas—1700; Juan Maria de [illegible], Report (Documentos para la Historia de Mexico, série 4, tomo V, p. 126).
Guaymi—1882; Bancroft Works, vol. III, (Native Races, vol. III), p. 704
Guaymis—1844; Mühlenpfordt, Republik Mejico, Band I, p. 210.
Gueimas—1748; Villa-Señor, Theatro Americano, p. 401.
Gueymas—1748; Villa-Señor, Theatro Americano, p. 402.
Guamas—1763; [Nentwig?], Rudo Ensayo, p. 229.
Guiámas (?)—1701; Kino, map (Bancroft, Works, vol. XVII, 1889, p. 360).

Upanguaymas Tribe

Hoopen Guaymas—1829; Hardy, map.
Jumpanguaymas—1850; Velasco, Bol. Soc. Mex. Geog. y Estad., tomo VIII, p. 227.
Jupanguimas—1748; Villa-Señor, Theatro Americano, p. 401.

101 Upas Guaimas—1763; [Nentwig?], Rudo Ensayo, p. 128.
Upanguaima—1864; Orozco y Berra, Geografía de las Lenguas, p. 42.
175 Upanguaimas—1879; Malte-Brun, Congrès International des Américanistes, tome ii, p. 39.
Upanguayma—Synthetic form.
Upanguaymas—1882; Bancroft, Works (Native Races, vol. i, p. 608).
Upan-Guaymas—1890; Bandelier, Investigations in the Southwest, p. 73.

Possibly the name *Cocomaques* (1864, Orozco y Berra, Geografía de las Lenguas, p. 42), or *Cocomaques* (1727, Rivera, Diario y Derrotero, l. 1514-1519) should be introduced among the synonyms of the Seri, but in the absence of definite information it may perhaps better be left unassigned.[1]

101 197 Of the four tribes assigned to the stock, the Upanguayma have been extinct probably for more than a century; the Guayma may survive in a few representatives probably of mixed blood and adopted language; the Tepoka have never received systematic investigation, but appear to survive in limited numbers on the eastern coast of Gulf of California about the embouchure of the Rio Ignacio sand-wash; while the Seri alone continue to form a prominent factor in Sonoran thought.

External Relations

131 648 The most conspicuous characteristic of the Seri tribe as a whole is isolation. The geographic position and physical features of their habitat favor, and indeed measurably compel, isolation: their little principality is protected on one side by stormy seas and on the other by still more forbidding deserts; their home is too hard and poor to tempt conquest, and their possessions too meager to invite spoliation; hence, under customary conditions, they never see neighbors save in chance encounters on their frontier or in their own predatory forays—and in either case the encounters are commonly inimical. The natural isolation of the habitat is reflected in modes of life and habits of thought; [186] and during the ages the physical isolation has come to be reflected in a bitter and implacable hereditary enmity toward aliens—an enmity apparently forming the strongest motive in their life and thought, and indeed grown into a persistent instinct. Thus the Seri stand alone in every respect; they are isolated in habitat and still more intensely isolated in habits of thought and life from all contemporaries; they far out-Ishmael the Ishmael of old on Araby's deserts.

648 The isolation of the Seri in thought and feeling is well illustrated by the relations with their nearest neighbors (activitally as well as geographically), the Papago Indians. The Papago are much esteemed [115] in Sonora as fearless fighters, always ready to join or even to lead a forlorn hope; yet when the expedition of 1895 was projected it was found no easy matter to induce the picked Papago guards quartered at Costa Rica to enter Seriland. They were ready, indeed mildly eager, for fray, provided it were on the frontier; but they held back in dread

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[1] This name seems rather to be Yuman, cf. Cocopa, Coconino, Cocomaricopa, Kohuana, etc.

from actual invasion of the territory of the hereditary enemy. Like representatives of the faith-dominated culture-grades generally, they spoke weightily of inherent rights descended from the ancient time, even back unto the creation; they repeatedly declared the right of the Seri to protect their territory because it was *theirs;* yet their converse but served to show the depth and persistence of their abhorrence of the Seri and of everything pertaining to them. And when gales arose to delay the work, when the frail craft of the party was storm buffeted and lost for days, when they were seized with the strange sickness of the sea, when the salt and sugar mysteriously disappeared (having been secretly sacrificed to diminish suffering from thirst), when all of the earth-powers and air-powers seemed to be arrayed against the expedition, they stoically held it to be but just punishment for a sacrilegious infraction of the ancient law—and their steady adherence to duty, despite tradition and physical difficulty and constant danger, revealed a real heroism. The strain was no slight one; it may have been felt more by the stay-at-homes than by the men in action; certainly a sister of one of the party (Anton Castillo) and spouse of a supporter at the supply station broke under the strain, and died of her terrors—and the return of the party was, to the Papago women and oldsters at least, as the rising of the dead. The dread inspired by the [123]
personal presence of the alien is stronger still; when the Seri rancheria at Costa Rica was visited in 1894 it was found needful to keep the Papago interpreter and others of the tribe at a distance, since the mere sight of the inimical tribesmen threw even the women and children into watchful irritation, like that of range-bred horses at scent of bear or timber-wolf, or that of oft-harried cats and swine at sight of passing dog—they instinctively huddled into circles facing outward, and ceased to think connectedly under the stress of nervous tension. The irrita- [115]
tion was so far mutual that it was days before the usually placid interpreter, Jose Lewis, recovered his normal spirits; while the 1895 interpreter, Hugh Norris, was actually rendered ill by the *mere* entrance into Seriland at Pozo Escalante. And the antipathy between Seri and Yaqui is nearly as great as that between the common-boundary neighbors.

The instinctive antagonism, or race antipathy, between the Seri and the widely distinct Caucasian is less trenchant and intense than the local antipathy; yet even between Seri and Caucasian there would seem to be hardly a germ of sympathy. In the days of his prime, the Tiburon islanders flocked around Don Pascual, first as a provider of easy provender and later as a superpotent shaman whose wrath bore destruction; yet their allegiance was never more than that of the cowed and beaten brute to a hated trainer, and his coming never brought a smile to their stolid features—indeed, his passage among their jacales was met with the same stolid yet sinister indifference accorded the solitary visitor to a menagerie of caged carnivores. And no sooner did his vision become

648 impaired than their fear-born veneration evaporated, and their native
antipathy reappeared in original virulence. The 1894 party was fortunate
[123] in successfully treating a sick wife of sub-chief Mashém, and
subsequently spent days in the rancheria, distributing gifts to old and
young in a manner unprecedented in their experience and making liberal
exchanges for such small possessions as they wished to spare; yet, with
a single possible exception, they succeeded in bringing no more human
expression to any Seri face or eye than curiosity, avidity for food, studied
indifference, and shrouded or snarling disgust. Among themselves
[609] they were fairly cheerful, and the families were unobtrusively affectionate:
yet the cheerfulness was always chilled and often banished by the
approach of an alien. The Sonorenses generally hold the Seri in indescribably
deep dread as uncanny and savage monsters lying beyond
the human pale; while the reciprocal feeling on the part of the Seri
toward Caucasians, and still more toward Indian aliens, seems akin to
that of the average man toward the rattlesnake, which he flees or slays
without pause for thought—it seems nothing less than intuitive and
involuntary loathing. The Seri antipathy is at once deepened into an
obsession and crystallized into a cult; the highest virtue in their calendar
is the shedding of alien blood; and their normal impulse on meeting an
alien is to kill unless deterred by fear, to flee if the way is clear, and to
fawn treacherously for better opportunity if neither natural course
lies open.

Concordantly with their primary characteristic, the Seri have avoided
186 ethnic and demotic union beyond the narrow limits of their own kindred;
and even of these they seem to have cast out parts, annihilating
the Guayma and Upanguayma, displacing and nearly destroying the
Tepoka, and outlawing individuals and (apparently) small groups.
+[175] The earlier chronicles indicate that the Jesuit missionaries, and after
them the Franciscan friars and the secular officials, sought to scatter
[797] the tribe by both cajolery and coercion, and endeavored to divide families
by restraint of women and children and by banishment of wives;
there are loose traditions, too, of the capture and enslavement of Indian
and Caucasian women in Seriland; yet the great fact remains that not
144 a single mixed-blood Seri is known to exist, and that no more than two
of the blood (Kolusio and perhaps one other) now live voluntarily
beyond the territorial and consanguineal confines of the tribe. The
romantic story of a white slave and ancestress of a Seri clan, sometimes
diffused through pernicious reportorial activity, is without shadow of
proof or probability; the tradition of the captivity of a Papago belle
was corroborated, albeit indefinitely, by Mashém's naive admission
that an alien women was once kept as a slave to a childless death due
to her inaptitude for long wanderings; and there is not a single known
fact indicating even so much as miscibility of the Seri blood with that
of other varieties of the genus *Homo*. Naturally the presumption of
miscibility holds in the absence of direct evidence; yet the presumption

is at least partially countervailed by conspicuous biotic characters, 144 such as color, stature, etc., so distinctive as almost to seem specific: the Seri are distinctively dark-skinned, their extreme color range (so far as known) being less than their nearest approach to any neighboring tribe; they are nearly as distinctive in stature, the difference between their tallest and shortest normal adults being apparently less than that between their shortest and the tallest of the neighboring Papago—though they are not so far from the more variable and often tall Yaqui; and they appear to be no less distinctive in such physiologic processes as those connected with their extraordinary food habits. Still more distinctive are the demotic characters connected with their habits of life and modes of thought; and when the sum of biotic and [171] demotic characters is taken, the Seri are found to be set apart from all neighboring Sonoran tribes by differences much more striking than the individual range among themselves.[1]

It is especially noteworthy that the Seri have held aloof from that 182 communality of the deserts which has brought so many tribes into union with each other and with their animal and vegetal neighbors 82 through common strife against the common enemies of sun and sand—the communality expressed in the distribution of vital colonies over arid plains, in the toleration and domestication of animals, in the development of agriculture, and eventually in the shaping of a comprehensive solidarity, with the intelligence of the highest organism as the controlling factor.[2] Dwelling on a singularly prolific shore, the Seri never learned the hard lesson of desert solidarity, but looked on the land merely as a place of lodgment or concealment, or as a source of luxuries such as cactus tunas, mesquite beans, and tasty game; they never formed the first idea of planting or cultivating, and their only notion of harvesting and storing against time of need was the intolerably filthy one of nature's simplest teaching; they apparently never grasped the concept of cooperation with animals, and came to tolerate the parasitical coyote only in that its persistence was greater than their own, and in so far as it was stealthy enough to hide its travail and the suckling of its young against their ravening maws; and they apparently never rose to real recognition of their own kind in alien forms, but set their hands against agricultural and zooculural humans as peculiarly potent and hence especially obnoxious animals. Naturally their racial intolerance was seed of battle and blood-feud; and they would doubtless have melted away under the general antagonism but for the natural barriers and unlimited food of their restricted domain.

At present, as for the later and best-known decades of their history, 175 648

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[1] It seems probable that the Seri were nearer to tribes of southern Baja California than to those of Sonora at the time of the earliest explorations, yet that the distinction was sufficiently strong to warrant the extension of the proposition to those tribes also.

[2] The Beginning of Agriculture, American Anthropologist, vol. VIII, 1895, p. 350. The Beginning of Zooculture, ibid., vol. X, 1897, p. 215.

175 the Seri are absolutely without extratribal affiliations, or even sympathy.
When the chronicles of three centuries are scanned in the
648 light of recent knowledge, it seems practically certain that they have
been equally isolated since the dawn of Caucasian history in Mexico;
and both recent data and the chronicles combine with the principles
of demotic development to indicate that the Seri have stood alone from
the beginning of their tribal career, and have never foregathered with
the neighboring tribes of distinct blood, distinct arts and industries,
distinct organization, distinct language, and distinct thought and
feeling.

648 The present isolation of the Seri throws light on their early history
114 and reveals the extent of the misapprehension of the pioneer missionaries,
175 who half deluded themselves and wholly deluded distant readers
into the notion that the Seri were really proselyted and actually collected
in the mission adjuncts of military posts established to protect
[797] settlers against forays of the tribe; for, as illumined by later and fuller
knowledge of the tribal characteristics, the chronicles are seen to indicate merely that a few captives, malingerers, cripples, spies, and tribal outcasts were harbored at the missions until death and occasional escapes brought the colonies to a natural end, with no real assimilation of blood or culture on either side. So, too, the persistent tribal antipathy reveals the error of confounding the independent or even inimically related outbreaks of the Seri and of the Pima or Apache with the concerted action of confederated tribes. Doubtless the ever-watchful spies from Tiburon habitually gave notice of the disturbance due to outbreaks of contemporary tribes, just as they do today when the local soldiery are withdrawn for duty on the Yaqui frontier; naturally the civil and military authorities were thereby led to provide for protection against the Seri and Piato, against the Seri and Pima, or against the Seri and Apache at each period of disturbance, just as they provided against the Seri between periods; and it would appear that this association in thought and speech led to the unconscious magnification, in the minds of the chroniclers, of a supposed alliance.

648 In brief, the tribal relations of the Seri seem always to have been antipathetic, especially toward the aboriginal tribes of alien blood, in somewhat less measure toward Caucasians, and in least—yet still considerable—degree toward their own colinguals and (presumptive) consanguineals.

POPULATION

161 So far as could be ascertained by inquiries of and through Mashém in 1894, the Seri tribe then comprised about 60 or 70 warriors, with between three and four times as many women and children—i. e., the population was apparently between 250 and 350. The group of about 60 (including 17 warriors) seen at Costa Rica was evidently growing rapidly, to judge from the proportion of youths of both sexes, infants in arms, and pregnant women; and there are other indications that

1: McGee E-5 (1894-1895) 1898 NU31 Seri NU31

the tribe is prolific and well-fitted to survive unless cut off in consequence of the hereditary antipathy toward alien blood and culture. 161

The population estimates of the past are naturally vague. In 1645 Ribas spoke of the tribe as "a great people"; and a century later Villa-Señor expressed himself in somewhat similar terms, and described their range in such manner as to indicate a population running into thousands. 161 175 A few years after Villa-Señor (in 1750), Parilla claimed to have annihilated the entire tribe, with the exception of 28 captives; but according to Velasco's estimates, the people numbered fully 2,000 some thirty years later, when the tribe was, however, once more nominally annihilated. In 1824 Troncoso estimated the Seri at over 1,000, and two years later Retis reckoned the population of Isla Tiburon alone at 1,000 or 1,500, while Hardy thought the entire tribe might number 3,000 or 4,000 at the utmost. About 1841 De Mofras put the aggregate population at 1,500; and at the time of the vigorous invasion by Andrade and Espence (1844), when a considerable number of the tribe were captured and a few slain, the total population was estimated at about 550—though it is probable that a good many tribesmen were left out of the reckoning. According to the chroniclers, a number of the Seri were slain after, as well as before, this invasion; and in 1850 Velasco estimated the tribe at less than 500, including 60 or 80 warriors. This estimate was in harmony with that made by Señor Encinas, who reckoned the tribe at 500 or 600 at the beginning of his war, in which half the tribe lost their lives. The figures of Velasco and Encinas correspond fairly with the reckoning by Mashém in 1894, due allowance being made for natural increase and for the losses through occasional skirmishes; and Mashém's count is shown not to be excessive by the considerable number of jacales and rancherias and well-trodden pathways found throughout Seriland in 1895.

On the whole it seems probable that the Seri population extended well into the thousands at the time of the Caucasian invasion; it seems probable, also, that the body was then too large for stability under its feeble institutional bonds, and hence threw off by fission the Guayma and Upanguayma fractions, and the Angeles, Populo, and Pueblo Seri fragments. [101] Furthermore, it seems probable that the prolific group fairly held its own against these normal losses and repeated decimations by battle up to the Migueletes-Cimarrones war of 1780, despite the vaunted annihilation in 1750; but that thenceforward the death-rate due to increasingly frequent encounters with incoming settlers exceeded the birth-rate, gradually reducing the tribe from some 2,000 to the 250 or 300 surviving the Encinas conflict. Finally, it seems probable that the tribe has again held its own and perhaps increased slowly under the renewed isolation of the last decade or two.

SOMATIC CHARACTERS

Several physical characteristics of the Seri Indians are so conspicuous
142 as to attract attention even at first sight. Perhaps the most striking
is the noble stature and erect yet easy carriage; next in prominence is
the dark skin-tint; a third is the breadth and depth of chest; another
is the slenderness of limbs and disproportionately large size of extremities, especially the feet; still another is length and luxuriance of hair;
and an impressive character is a peculiar movement in walking and
running.

The mean stature of the adult Seri may be estimated at about 6 feet
141 (1.825 meters) for the males, and 5 feet 8 inches (1.727 meters) or 5 feet
9 inches (1.73 meters) for the females, these estimates resting on visual
126 comparisons between Caucasians of known stature and about forty
128 adult Seri of both sexes at Costa Rica in 1894. In several of the
accompanying photomechanical reproductions (e. g., plates XIII, XVI,
XIX, XXIII, and XXVIII) a unit figure, introduced partly for the encouragement of the individuals and groups but chiefly to afford a basis for
approximate measurement, gives opportunity for test of the estimate,
the figure measuring 5 feet 11 inches (1.80 meters) to 5 feet 11½ inches
(1.812 meters), and weighing about 215 pounds in the costume shown,
including hat and boots.[1] These pictures and some thirty unpublished
141 photographs, like the observations on the ground, indicate that practically all of the fully adult males and several of the females overtop the
Caucasian unit. The only definite measurement known is that of the youthful and apparently immature female skeleton examined by Dr Hrdlicka, of which the dimensions indicate a stature (estimated by the method of Manouvrier) of about 5 feet 3¾ inches (1.62 meters),[2] or 3½ inches above the female normal of 5 feet ¼ inch (1.53 meters) given by Topinard; but this considerable stature is, probably on account of the youth of the subject, much below the mean indicated by the ocular and photographic comparisons (it corresponds fairly with that of the Seri maiden represented in plate XXV, whose age was estimated at 18 years). Naturally this striking stature, especially that of the warriors, has been much exaggerated by casual observers; the typical warrior, El Mudo, depicted in plate XIX, is indeed commonly reckoned as a 7-footer, though his actual stature (diminished somewhat in the pictures by fearsome shrinking from the ordeal of photographing) can hardly exceed

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[1] The average net height and weight of the unit figure (that of the author) are about 5 feet 8½ inches and 200 pounds, respectively.

[2] Or about 1.6176 meters estimated by the method of Rollet (cf. The Races of Man, J. Deniker, London, [illegible], p. 32).

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[FACING P. 137]

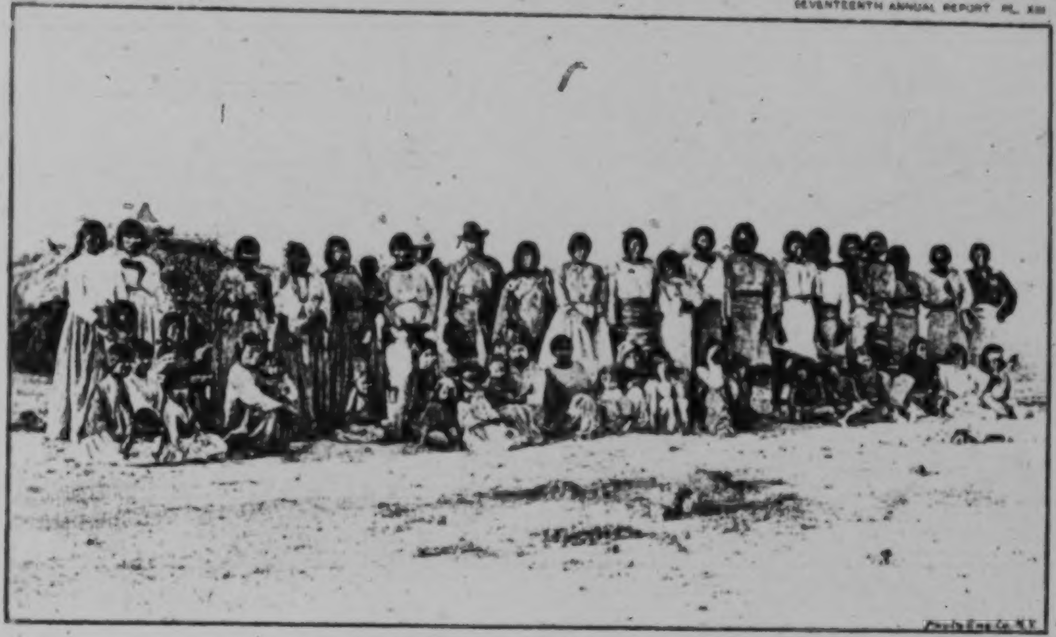

Photo-Eng. Co. N.Y.

GROUP OF SERI INDIANS ON THE FRONTIER

6 feet 3 inches (1.90 meters); while for centuries the folk have been 141 reputed a tribe of giants.

The estimation of Seri stature is difficultated by the impossibility of 141 defining maturity; and the effort to determine whether particular indi- 145 viduals were adult brought out clear indications of slowness in reaching complete maturity, i. e., of the continuation of somatic growth throughout an exceptionally long term in proportion to other stages in the life of the individual. Thus, with scarcely an exception, the polyparous matrons were taller than the mean of 5 feet 9 inches, while the apparently adult maidens (with one exception) and the younger wives were below this mean; and in like manner the stature of the warriors varied approximately with appearance of age, all of the younger men falling below the mean, and all of the older (except Mashem) rising above it. The difficulty of estimation is further increased by the absence of age records and the impracticability of ascertaining and standardizing the habitually guarded expressions for relative age implied in the kinship terminology; so that the age determinations were roughly relative merely, and there was no means of fixing the absolute age of maturity, of puberty, of marriage, or of the assumption of manhood and womanhood howsoever defined.

Under the conditions, the determination of stature-range in the Seri rancheria at Costa Rica in 1894 was not only difficult but uncertain; 141 yet in general terms it may be said that the women having two or more children—about twenty in number—were notably uniform in stature, ranging from about 5 feet 7½ inches (in the case of an aged and shrunken elderwoman) to 5 feet 11 inches; that the younger women were more variable; and that the warriors (seventeen in number), of whom only a part were apparently heads of families, were more variable still, though the variation, apart from that apparently correlated with age, was less than is customarily found among the exceptionally uniform Papago, and decidedly less than that seen among the Yaqui or the local Mexicans.

The Seri skin-tint is of the usual Amerindian bronze, save that it is 142 exceptionally dark, with a decided tone of black. Essayed representations of the characteristic color appear in plates XVIII and XXIV; but the essays are little more satisfactory than the innumerable attempts at depicting the skin-color of the American aborigines that have gone before. Experienced observers of the native tribes may form an impression of the Seri color from the explanation that they are as much darker than the neighboring Papago as the Papago are darker than the average tribesmen about the Great lakes; the Papago themselves being as much darker than the southern plains or Pueblo folk as these are darker than those of the Lake region. The range in color seems to be slight; the variation among the 60 individuals of both sexes and all ages seen at Costa Rica was hardly perceptible, being less than that usually observed in a single family of any neighboring tribe; while the

142 color distinction alone sufficed to distinguish the Seri from any other people at a glance.

Foremost among the general somatic distinctions between the Caucasian and the American native is the peripheral development of the former, displayed in better-muscled limbs, more expressive features, etc—i. e., the Caucasian body expresses a readily perceptible but difficultly describable peripherization, in contradistinction from the centralization displayed by the aboriginal body. Save in a single particular (the large feet and hands), the Seri exemplify this distinction in remarkable degree: their chests are strikingly broad, deep, and long, recalling the thoroughbred racer or greyhound; their waists are shortened by the chest development, yet are rather slender; their hips are broad and deep, with a clean-cut yet massive gluteal development; and, in comparison with the robust yet compact bodies, the tapering arms and legs seem incongruously slender.[1] This physical characteristic, like that of color, is insusceptible of quantitative expression, at least without much more refined observations than have been made; but its value may be indicated roughly by the statement that the Seri differs from the average aboriginal American in degree of somatic concentration as much as the average aborigine differs from the average Caucasian—though it is noteworthy that the departure in this direction from the aboriginal mean is in some measure regional (i. e., the Seri differ less in this respect from the Papago and other swift-footed natives than from the average tribesmen of the continent). The Seri robustness of body and slenderness of limb are brought out by the absence (in appearance at least) of adipose; the skin is strikingly firm and hard and evidently thick, yet the play of muscle and tendon beneath indicate a dearth of connective tissue and convey that impression of physical vigor which their familiars so miss in the photographs; and in no case, save perhaps in the young babe, could the slighest trace of obesity be discerned. Thus the Seri, male and female, young and old, may be described as notably deep-chested and clean-limbed quick-steppers, or as human thoroughbreds.

The somatic symmetry of the average S[illegible], marred somewhat by the slenderness of limb, is still more marred by the large extremities. The hand is broad and long, the fingers are relatively long as those of the Caucasian, the nails are peculiarly thick and strong, and the skin is so thick and calloused as to give a clumsy look to the entire organ; the feet are still larger and thicker-skinned, appearing disproportionately long and broad for even the heroic stature of the tallest warriors. The integument covering the feet, ankles, and lower legs is incredibly firm and hard, more resembling that of horse or camel than the ordinary human type;

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[126] [1] The photo-mechanical reproductions do but meager justice to the splendid chest development of the Seri, young and old; for they were not only at semisomnolent rest during the better hours at which photography was most feasible, but invariably quailed before the mysterious apparatus and crouched shrinkingly in such wise as to contract their chests and lose their habitually erect and expansive carriage.

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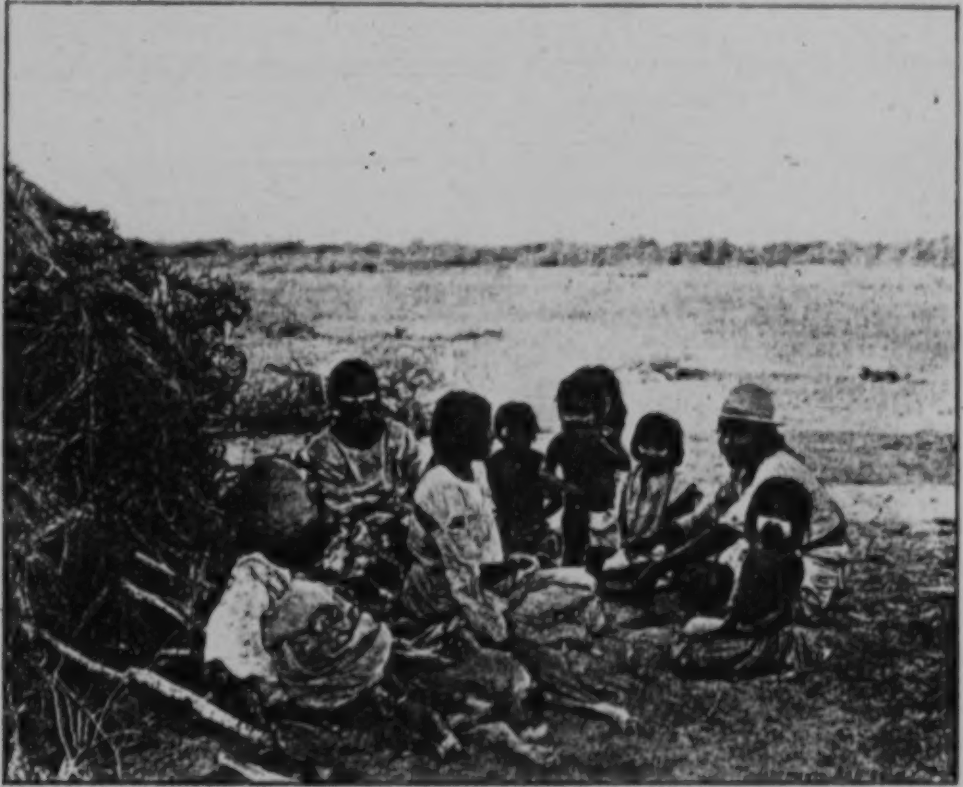

SERI FAMILY GROUP

[FACING P. 139]

its astounding protective efficiency being attested by the readiness with which the Seri run through cactus thickets so thorny as to stop horses and 142 dogs, or over conglomerated spall-beds so sharp that even the light coyote leaves their trail. In the absence of measurements it may merely be noted that the hands and feet of the Seri are materially larger, not only absolutely but relatively to their stature, than those of neighboring tribesmen or even of Mexican and American workmen. And, on the whole, it may be said that in their proportions, as in their stature and color, the Seri are strikingly uniform, their range being less than that commonly observed in contemporary tribes, and the differences between them and their neighbors much exceeding the range among themselves. 481

Somatically distinctive as is the Seri at rest, he (or she) is much more so in motion—though the characteristics so readily caught by the eye are not easily analyzed and described. Perhaps the most conspicuous element in their walk is a peculiarly quick knee movement, bringing the foot upward and forward at the end of the stride; this merges into an equally quick thrust of the foot forward and downward, with toe well advanced, toward the beginning of the next stride; and these motions combine to produce a singular erectness and steadiness of carriage, the body moving in a nearly direct line with a minimum of lateral swaying or vertical oscillation, while the legs neither drag nor swing, but spurn the ground in successive strokes. Thus the walk seems notably easy and graceful, while the walker carries an air of alertness and reserve power, as if able to stop short at any point of a pace or to bolt forward or backward or sidewise with equal facility; he simulates the "collected" animal whose feet tap the ground lightly and swiftly while his body appears to yield freely to voluntary impulse. In this deer-like or antelope-like movement all the Seri are much alike, and all are decidedly removed from their neighbors, even the light-footed Papago. The component motions are most conspicuous in leisurely walking, though the resultant movement is more striking in rapid walk or the incredibly swift run of youths and adults. The general movement is akin to that shaped by the habit of carrying burdens [482] balanced on the head, as the Seri women actually carry their water ollas for astonishing distances; but the carriage is shared—indeed, best displayed—by the warriors and growing boys, who are not known to carry water in this way.

Among the conspicuous but nondistinctive somatic characters of the 142 Seri is luxuriant straight hair habitually worn long and loose. Commonly the hair is jet-black for most of the length, growing tawny [302] toward the tips; sometimes it is black throughout, while again the tawny tinge, or perhaps a bleached appearance, extends well toward the scalp. Age-grayness seems not to be characteristic; the most aged 142 matrons known have no more than a few inconspicuous and scattered gray hairs, though the pelage of some is slightly bleached or faded. 145 None of the warriors at Costa Rica showed the slightest grayness except

142 Mashém (aged about 30 years), who had a few gray strands about the
145 temples; but it may be significant that the hair of the tribal outlaw Kolusio, who has lived with white men for full three score years, is iron-gray. Kolusio's pelage is trimmed in Caucasian fashion; that of Mashém
[115] is cut off mid-length in a manner exciting comment, if not derision, on the part of his fellows and others, and resulting in his (Spanish)
[302] sobriquet, Pelado (literally, Peeled, or idiomatically, Shorn); but with few exceptions the hair is kept long as it can be made to grow, and receives careful attention to this end. Naturally the length is somewhat variable; in many cases it depends to or slightly below the waist, while in other cases it merely sweeps the shoulders; and in general it appears to increase in both length and luxuriance not only throughout adolescence, but up to late maturity, for the best pelages are presented by moderately aged persons, while none of the youths are so luxuriantly tressed as their elders. Not the slightest trace of baldness appears. The infantile pelage is short, brownish in color, soft or even silky, and inclined to curl toward the tips. It is not until the age of several months that the hair begins to acquire the adult character, and at least some children retain traces of the infantile pilary character up to 5 or even 10 years; and none of the children display such jet-black shock-heads as are frequently found among other tribes, whose adult pelage may nevertheless be much less luxuriant than that of the Seri. On the whole, it may be said that the Seri hair is luxuriant and vigorous beyond the aboriginal average, and that it, like various other somatic features, indicates a relatively late maturation in the life-history of the individual.

Both sexes are beardless. The female faces seen were entirely free of
142 strong pilary growth; one or two of the warrior faces showed scattering hairs, and Mashém sported a feeble and downy but jet-black mustache with an exceptional number of scattered hairs about the chin; while Kolusio shaved regularly, and might, apparently, have grown moderately stiff but straggling mustaches and beard. Axillary hair seems to be wanting; pubic hair is said to be scanty; otherwise the bodies are practically hairless (more nearly so than those of average Caucasians).

The teeth are solid, close-set, and even, and impress the observer as large; they close with the upper incisors projecting slightly beyond the lower denture in the usual manner.

128 The skeletal characteristics of the Seri are known only from a single specimen obtained in the course of the 1895 expedition in such manner
141 as to establish the identification beyond shadow of question. This skeleton was submitted to Dr Aleš Hrdlička for measurement and discussion.[1]

In making his examination, Dr Hrdlička compared the unquestion-

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[1] A separate cranium was obtained by the 1895 expedition, having been sought and picked up by a Mexican member of the party in verification of his account of the killing of one of the Seris; but, in view of the possibility of erroneous identification, this skull was not submitted in connection with

ably authentic cranium of the entire skeleton with two skulls preserved 128
in the American Museum of Natural History, viz, No. 99/84, designated 141
as a skull of a Tiburon mound-builder, and No. 99/85, labeled as having

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the complete skeleton. Subsequently this specimen also was put in Dr Hrdlička's hands (at his request), and was kindly examined, with the results recorded in the following letter:

March 29, 1898.

Professor W J McGee,
Bureau of American Ethnology, Washington, D. C.

Dear Sir: The skull which you submitted to me for examination shows the following:

The skull is that of a male between 40 and 50 years of age. The facial parts and a portion of the left temporal bone are wanting; otherwise the specimen shows nothing pathologic. There are signs that the skull belonged to a very muscular individual. The occipital depressions, ridges, and protuberance are very marked, and the temporal ridges approach to within 1.7 cm. on the left and 2.3 cm. on the right of the sagittal suture. The whole skull is rather heavy and massive; thickness of parietal bones 4–8 mm.

The shape of the skull is unusual. The frontal region is rather broad (frontal diameter, minimum, 9.7; frontal diameter, maximum, 12.1 cm.), but quite flat and sloping. Frontal ridges wanting (broken away).

The sagittal region is elevated into a crest which begins 4 cm. posteriorly from the bregma, is most marked at the vertex, and proceeds in two tapering diverging crests to the lambdoid suture. The whole vertex region is considerably elevated and forms a blunt cone, which is particularly noticeable when the skull is viewed from the side.

The temporo-parietal regions are moderately convex and expanded anteriorly, but become flattened and gradually narrow toward the parietal bosses. The parietal bones measure each 11 cm. along the coronal, but only 8.8 cm. along the lambdoid suture. The gradual tapering of the parietal regions from their middle backward continues on the occipital bone up to the inion, and gives the norma verticalis of the skull a peculiar appearance.

The occipital region, as a whole, does not protrude much, as in true dolichocephals, but it shows a prominent broad crest, formed by the two superior semicircular lines and the region between them. The external occipital protuberance is pronounced and shows signs of strong muscular attachments. A small distance above the foramen magnum, on each side of the median line, is a very marked depression, surmounted by a small ridge.

Of the mastoids, the right has been broken off and the left is damaged, but they do not seem to have been of extraordinary size.

The base of the skull is fairly well preserved and shows the following characters: The basilar process and the petrous portions of the temporal bones are more massive than usual. The glenoid fossae are broad and of fair depth. The styloids are quite diminutive (right 0.7, left 0.5 cm. long). The foramen magnum is hexagonal in outline; it is 4.4 cm. long, 3.4 cm. wide; its plane is inclined backwards in such a way that its antero-posterior diameter prolonged would touch about the lower borders of the nasal aperture.

The cranial cavity can be well inspected through the opening caused by injury. The internal surface of the frontal bone shows but very few traces of brain impressions. There are several large impressions on each parietal bone, and deep, though rather small, fossae for the extremities of the occipital lobes on the occipital bone. The superior border of the dorsum sellae shows in the middle a rounded notch about 3 mm. deep.

The serration of the sutures is throughout very simple.

Measures—The glabello-occipital length and maximum width of the skull can not be accurately determined on account of injuries to the bones. They amount, respectively, to about 18.8 and 14 cm., giving the cephalic index of about 74.4 (moderate dolichocephaly). The basion-bregma height is 14.1 cm.; basion-vertex, 14.8 cm.; basion-obelion, 13.6 cm.; basion-lambda, 12.2 cm. The two more anterior of these measures characterize the skull as a rather high one. The two more posterior measures show the rapid downward slope of the posterior half of the sagittal region. The maximum circumference of the skull (above the ridges) is 52 cm.

The bregma-lambda arc measures 13.3, the lambda-opisthion arc 12.2 cm. Diameter between the asterions = 10.7 cm.

If the skull under examination is considered from a purely evolutionary standpoint, it must be pronounced to be in many points inferior to the average white and even to the majority of Indian crania. An anthropological identification of the specimen is difficult, for the reason that we are still very imperfectly acquainted with the craniology of the people of southwestern United States and northern Mexico. *From what we know of the crania of the Pima, and the extinct Santa Barbara, Santa Catalina, etc, Californians, it is possible to say that the individual whose skull is here [144] reported upon may have belonged to a people physically related to either of these groups. The skull is very distinct from that of an Apache. The female Seri cranium examined by me before does not show certain of the peculiarities of this specimen; nevertheless it is very possible that both crania belonged to individuals of the same tribe.

Aleš Hrdlička.

128 141 been found in a shell mound at Tiburon, California; but, in view of the possible error in identification in these cases, the comparisons are omitted. Otherwise, Dr Hrdlička's determinations are as recorded in the following report (and his drawings of the anterior and left lateral aspects of the cranium are reproduced in figure 6):

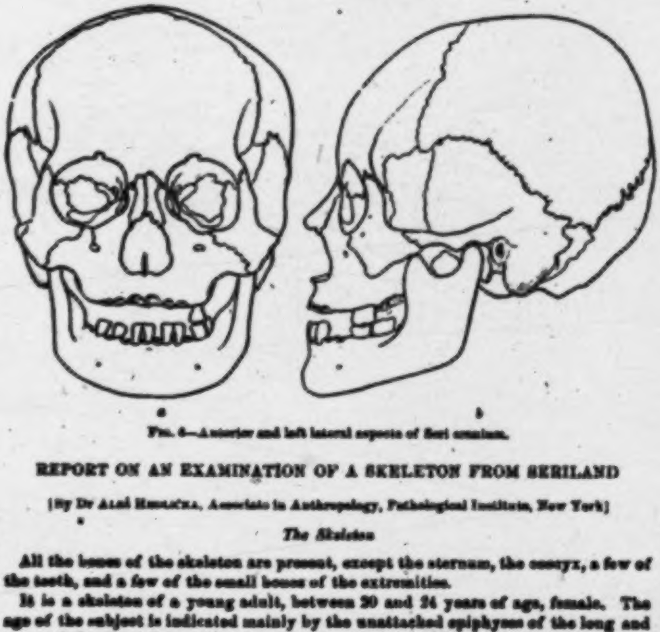

Fig. 6—Anterior and left lateral aspects of Seri cranium.

REPORT ON AN EXAMINATION OF A SKELETON FROM SERILAND

[By Dr Aleš Hrdlička, Associate in Anthropology, Pathological Institute, New York]

The Skeleton

141 All the bones of the skeleton are present, except the sternum, the coccyx, a few of the teeth, and a few of the small bones of the extremities.

It is a skeleton of a young adult, between 20 and 24 years of age, female. The age of the subject is indicated mainly by the unattached epiphyses of the long and some of the short bones, those epiphyses, namely, which are the last to ossify. The femininity of the subject is indicated by the generally slightly marked ridges, etc, of muscular attachment, and by the decidedly feminine character of the pelvis (light, well-spread ilia, broad subpubic arch) and of the skull (lack of supraorbital ridges, thin dental arches, small mastoids, etc).

There are no wounds or pathological conditions noticeable on the skeleton. Several peculiarities and anomalies are observable. They will be described with the parts they concern.

[128] The measurements to follow are expressed in centimeters. The French anthropometric methods and nomenclature have been adopted.

The Skull

The skull is of *fair* size, and is symmetrical throughout, with the exception of a slight irregularity in the occipital region. All the sutures, with the exception of the basilar, open; nerve foramina all large; serrations rather simple; no intercalate bones of any kind.

Norma frontalis—Visage symmetrical. Forehead well arched, medium height.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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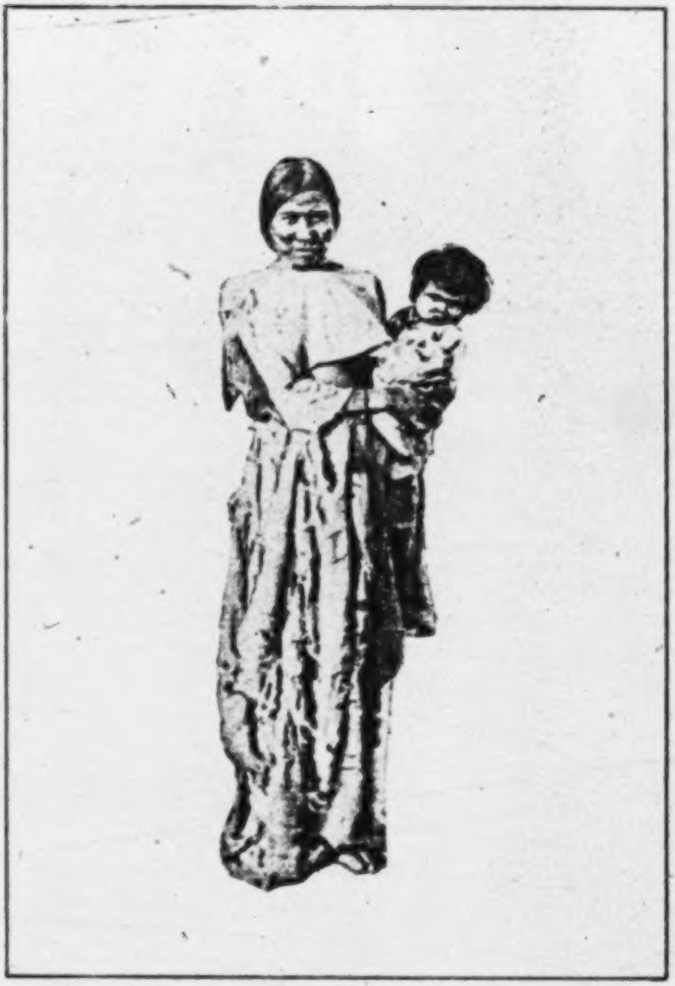

SERI MOTHER AND CHILD

[P. 142 A]

Supraorbital ridges almost absent; glabella convex. Nasion depression medium. Orbits obliquely quadrilateral; their axes (internal inferior corner—internal superior corner) meet at ophryon. Spheno-maxillary fissure, lachrymal canal, and nerve foramina all above average in size. Nasal bones well bridged, very slightly concave; nasal aperture regular; no "gouttières"; turbinated bones well formed; septum wanting; spine 0.65 long, bifid at the end. Zygoma of medium size and strength. Superior maxilla of medium size, well formed. Dental arches regular; no prognathism. Bone of lower jaw moderately strong; does not protrude anteriorly; conformation normal.

Norma basalis—Contour almost round. Whole base symmetrical, except as noted below; the middle structures appear shortened antero-posteriorly, slightly more on the left than on the right; basilo-vomeric angle rather acute (100°); foramina of the base all spacious; the petrobasilar suture is large (average diameter, 3 mm.) and is throughout pervious. Superior dental arch regular and of medium thickness. Dentition incomplete—right upper wisdom tooth not fully erupted; left lower wisdom tooth wanting entirely. Denture fine and regular; no teeth decayed. Both upper first incisors absent.[1] Teeth set regularly in socket and of medium size. Palatine arch symmetrical. Shape of palate normal. Posterior nasal foramina oblong. Styloids small, shell-like, flattened.

Norma occipitalis—The posterior part of the skull is somewhat flattened. The sides of the surface present a pentagonal outline with rounded corners, the apex corresponding to the sagittal suture, or obelion. There is a slight asymmetry, the right side being somewhat flattened. Exterior occipital protuberance not well marked.

Norma verticalis—Outline an irregular ovoid, wider posteriorly and more prominent on the left and posteriorly. Slight symmetrical depression of the parietals, beginning about 1 cm. and ending 5 or 6 cm. behind the coronal suture and extending laterally from the sagittal suture to the upper temporal ridge.

Norma lateralis—Outline ovoid, larger posteriorly. Pterions en H, of medium breadth. Temporal ridges not very distinct. Parietal bosses prominent.

	cm.
Skull capacity, Broca's method	1,545
Skull capacity, Flower's method	1,490
Antero-posterior diameter, maximum	16.3
Lateral diameter, maximum	14.4
Cephalic index, 88.3 = Brachycephalic.[2]	
Chin-bregma	21.2
Chin-ophryon	13.2
Alveolar point-ophryon	8.6
Bizygomatic breadth, maximum	13.0
Facial index	98.5
Superior facial index (Broca's), 66.1 = Mesoseme.	
Height of nose aperture	5.4
Breadth of nose aperture	2.65
Nasal index, 49.0 = Mesorhine.	
Mean height of orbits	3.80
Mean breadth of orbits	3.95

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[1] Both these incisors were apparently lost at the same time, not from general lesion, and some years previous to the death of the individual, as the sockets appear exactly alike, bear no signs of violence, and are almost filled up with cancellous tissue (some religious or social rite?).

[2] If allowance is made for the effects of flattening of the occipital on the long diameter, and hence on the index, of a skull, it becomes apparent that the true index of this skull is probably of a low brachycephalic, or, at most, of mesocephalic order. It is very doubtful if the deformity is intentional; its moderate extent and the total lack of signs of counter-compression would indicate with more probability that the deformity might have been produced by the individual lying, when an infant, by compulsion or habit, on something hard, probably a board.

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Orbital index, 98.7=Megaseme.	cm.
Mean depth of orbits	4.6
Dacryon to dacryon	2.3
Frontal diameter, minimum	9.2
Frontal diameter, maximum (interstephanic)	11.4
Biauricular diameter[1]	12.3
Diameter through parietal bosses	14.3
Bimastoid diameter	10.55
Distance from superior alveolar arch to inferior occipital ridge	14.35
Distance between supramastoid eminences	13.9
Length of basilar process (notch of vomer to basion)	2.95
Basion-bregma height	13.45
Basion-obelion height	? (obelion indistinct.)
Basion-ophryon	14.0
Basion-inion	8.1
Circumference, maximum	49.4
Nasion-ophryon arc	1.8
Nasion-bregma arc	12.3
Nasion-inion arc	30.0
Nasion-opisthion arc	35.5
Pterion-bregma arc	11.2
Arc external meatuses, over forehead	29.2
Arc external meatuses, over frontal bosses	30.4
Arc external meatuses, over bregma	34.0
Arc external meatuses, maximum	35.7
Arc external meatuses, over inion	23.6
Temporal ridges to sagittal suture (stephanions-bregma), (arc) mean	7.5
Lateral diameter of foramen magnum, maximum	2.75
Antero-posterior diameter of foramen magnum, maximum	3.60
Index of foramen magnum	76.4
Length of hard palate, maximum	4.6
Height of hard palate at first molars	1.55
Breadth of hard palate at first bicuspids	2.9
Breadth of hard palate at first molars	3.55
Breadth of hard palate at third molars	4.1
Height of posterior nares	3.1
Breadth of posterior nares	2.55
Index of posterior nares	82.3
Angle of mandibles	114°
Length of mandibular rami	5.55
Bigoniac diameter of mandibles	9.85

The Vertebral Column

Cervical vertebræ—Number complete; characters normal. All cervical spinous processes bifid; vertebra prominens well defined. All epiphyses absent.

	cm.
Transverse diameter of third cervical vertebra (between posterior tubercles of the pedicles), maximum	5.05
Antero-posterior diameter of third cervical vertebra (body-spinous process), maximum	4.20
Greatest lateral diameter of foramen, same vertebra	2.15

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[1] The "biauricular" signifies the distance between points of the skull immediately above the commencement of the superior zygomatic border on the temporal.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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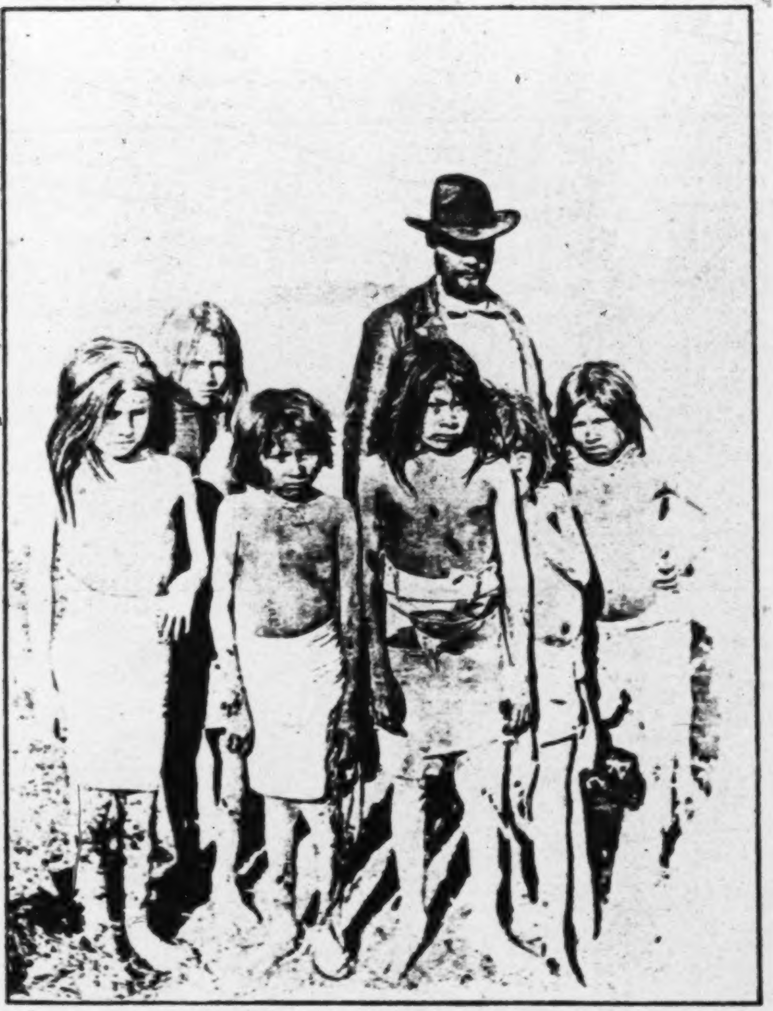

GROUP OF SERI BOYS

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Greatest antero-posterior diameter of foramen, same vertebra	1.45
Height of body in center, same vertebra	.90

Dorsal vertebræ—Number complete; characters absolutely normal. Resemblance to lumbar processes begins with tenth dorsal vertebra; a number of the epiphyses of the various processes either imperfectly united or detached; body epiphyses absent.

	cm.
Antero-posterior diameter of body of sixth dorsal vertebra, maximum	2.55
Lateral diameter of body of sixth dorsal vertebra, maximum	2.90
Height of body in center	1.67
Separation of transverse processes	5.65
Edge of upper articular processes-tip of spinous process	3.50
Breadth of foramen, maximum	1.90
Length of foramen, maximum	1.50

Lumbar vertebræ—Number complete; characters absolutely normal. Only disk epiphyses detached.

	cm.
Antero-posterior diameter of body, maximum	3.12
Antero-posterior diameter of whole vertebræ, maximum	7.10
Lateral diameter of body, maximum	4.55
Lateral diameter of transverse processes, maximum	7.10
Height of articular processes, maximum	4.33
Height of body in center, maximum	2.20
Antero-posterior diameter of canal, maximum	1.50
Lateral diameter of canal, maximum	2.10

The Sacrum

Aspect normal with the following exception: There are distinct intervertebral disks between the different segments (5 segments); there are deep lateral incisures in places where the lateral processes unite, and the fourth and fifth segments are entirely separated (in one piece) from the upper three (four small spots of consolidation along the posterior border of the articulation are visible). The articular processes of the first and second sacral segments are similar in form to the lumbar, and form open articulations. There is a large foramen situated below the spinous processes of the first and third segment, and a smaller beneath the second. Coccyx absent. Curvature medium.

	cm.
Breadth of the sacrum, maximum	10.5
Height of the sacrum, maximum	11.2
Index of the sacrum	93.7

The Thoracic Cage

Aspect of ribs normal. Strength medium. Sternum absent.

Length second right rib (arc)	21.8
Long diameter second right rib	12.5
Maximum height of the curve	7.2
Length ninth right rib (arc)	26.8
Long diameter ninth right rib	10.7
Maximum height of curve	6.45

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Bones of the Upper Limbs

Clavicles—Form normal, slender; epiphyses united. Length, maximum, 13.5. Muscular attachments of slight prominence.

Scapulæ—Form normal, spine directed somewhat more upward than is usual; whole bone light and slender; acromial epiphyses absent.

Height (middle of glenoid fossa-tip of inferior angle)....	12.0
Breadth (middle of glenoid point, maximum)	8.7

Humeri—Form normal; bone slender; head-epiphyses not united; left head perforated by large oval foramen from coronoid to olecranon fossa (8 mm. by 4½ mm.)

Length of left humerus (with epiphysis)................	31.3
Length of right humerus (with epiphysis)	31.0

Ulnæ and radii—Form normal; bones slender; lower epiphyses ununited.

Length of left radius (head and end of styloid)	24.1
Length of left ulna (olecranon-styloid)	25.8

Metacarpus, carpus, and phalanges—Nothing special.

Bones of the Pelvis and Lower Limbs

All the bones of the pelvis and lower limbs of normal shape and medium size. Pelvis apparently that of a female (subpubic angle 100°). Bones well united; all traces of the union in acetabulum effaced. Epiphyses ununited except on the ischiatic protuberances, where bony union just begins. Above the fossa acetabuli (8 mm. postero-superiorly from the uppermost edge of the fossa) there is in both acetabula an irregularly triangular depression of about 2 water-drops capacity (accessory tendon?).

Anterior to posterior-superior spine	13.7
Point of pubis to posterior-superior spine..................	15.6
Point of pubis to anterior-superior spine...................	12.7
Point of pubis to point of ischium..........................	10.8
Bi-iliac diameter of whole bony pelvis (between internal iliac borders), maximum	21.0
Height of coxal bones (tuberosity of ischium to iliac border in this case without its epiphyses), maximum.......	19.4
Antero-posterior diameter of superior strait................	11.6
Lateral diameter of superior strait	11.4
Oblique diameter of superior strait	11.3

Height of subject (determined after Manouvrier's method) about 1.620 m. (above the general average).

Femora—Lower epiphyses ununited. Muscular attachments, including lineæ asperæ, but little prominent.

Length of femora (both condyles applied to base)........	43.6
Inclination of neck to shaft	130°

Tibiæ—Both platycnemic. All the epiphyses ununited, especially the upper.

Antero-posterior diameter at center, maximum...........	2.5
Lateral diameter at center, maximum......................	1.63
Length (articular surface-tip of styloid)..................	35.6

$$\text{Femoro-tibial index}\left\{\frac{\text{length of tibia} \times 100}{\text{length of femora}}\right\} = 82.0$$

This index is 81 in the European, 83 in the negro, and 86 in the Bushman.[1]

Fibulæ—Length, 35.2. Epiphyses not yet united, particularly the upper.

Tarsal, metatarsal, and phalangial bones—Nothing special.

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[1] Quain, Anatomy, 1882: Osteology, p. 187.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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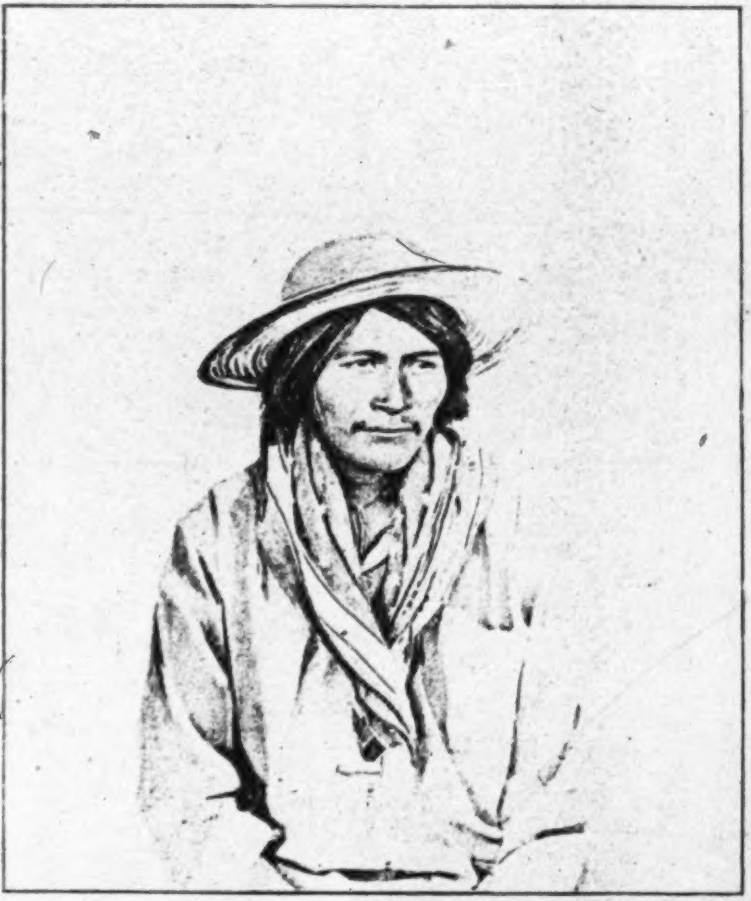

MASHEM, SERI INTERPRETER

[p. 146 A]

Résumé of the Peculiarities of the Skeleton

The nerve and blood-vessel foramina are generally large. This character and the
platycnemic tibia indicate an ample musculature of the subject. 141

The height is above the general average for a woman, which, according to Topinard, is 1.53.

The petro-basilar fissures are large and visibly pervious. This condition is found occasionally; significance doubtful; it is more frequent in young subjects.

Platycnemic tibia—This is considered a simian character.[1] It was found first by Broca in 1860[2] on bones from Eyzies; it is associated with relative strength of the muscles of the leg; is very frequent among the characters found on bones from the epoch of polished stone in Europe.[3] J. Wyman found this character more accentuated than at Cro-Magnon or at Gibraltar on a third of the tibias from the mounds of the United States.[3]

Perforated humerus—Noticed first by Desmoulins, 1826, on the humeri of Guanches and Hottentots;[4] occurs with greatest frequency in the following peoples:[5]

	Per cent.
156 neolithic humeri from around Paris	21.8
97 humeri of African negroes	21.7
122 humeri of Guanches	25.6
80 humeri from the mounds of United States (J. Wyman)	31.2
32 humeri of Polynesians	34.3
30 humeri of altaic and American races	36.2

Summarily, Dr Hrdlička's special determinations conform with the
external observations on the Seri body; they indicate an exceptionally 141
large stature, together with a notably well-developed and well-propor- 142
tioned osseous framework, of the native American type, yet significantly approaching the Caucasian in several respects. It is especially noteworthy that the cranium is well formed and capacious, the precise measurements corroborating the external observation that the Seri head is of good absolute size, though relatively smaller (in comparison with height and weight) than that of some neighboring tribes of less stature—e. g., the Papago. It may be noted, too, that the imperfect
ankylosis of the epiphyses, and various other skeletal features, are in
accord with the inferences from the living body as to the slowness of [145]
attaining maturity. It may be noted further that the extraordinary
development of the muscular attachments, especially in the masculine [147]
cranium, is quite in harmony with the habits of the tribe.

The remaining somatic characteristics of the Seri are for the greater
part of such sort as to be described by generalities and negatives. In 142
general they correspond with those of typical American tribesmen and 144
other peoples; and they do not exhibit striking peculiarities in proportion or structure. In the opposability of the thumb, the nonopposability of the hallux, and the independence of fingers and toes, the Seri hands and feet are developed quite up to, if not somewhat beyond, the

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[1] Hovelacque et Hervé, Précis d'Anthropologie, 1887, pp. 112, 267.

[2] Bulletin de la Société d'Anthropologie, 1860.

[3] Hovelacque et Hervé, op. cit., p. 112.

[4] Histoire Naturelle des Races Humaines, 1826, p. 264.

[5] Hovelacque et Hervé, op. cit., p. 281.

142 Amerindian[1] average; the feet are set straight in walking, as befits the
pedestrian habit; the arms are not elongated, and the thighs seem no
[144] longer in proportion to other elements of the stature than are those of
the highest human types. In like manner the bodies are notably free
from artificial deformation; the skulls are not flattened or otherwise
[304] distorted; there is no scarification, or even tattooing; neither ears nor
lips are pierced for pendants or labrets; the teeth are not filed or
drilled, though in some cases at least the first incisors of females are
extracted; and while there are trustworthy records of the piercing of
the nasal septum for the insertion of pendants, no examples were found
at Costa Rica in 1894. The food habits and other customs of the tribe
indicate, or at least suggest, more or less specialized and perhaps distinctive
internal characters; but, without actual examination of the
organs, these inferred characters demand little more than passing notice.

On reviewing the more prominent somatic characters of the Seri, it is found that the greater number are either functional or presumptively correlated with function, and that only a few—chiefly stature and color—are simply structural; accordingly a comparison of the peculiar somatic features and the peculiar individual habits of the tribe would seem to be instructive in more than ordinary degree.

The most striking trait of the Seri is the pedestrian habit. The
361 warriors and women and children alike are habitual rovers; their jacales
and even their largest rancherias are only temporary domiciles, evidently
vacant oftener than occupied; the principal rancherias are
separated by a hard day's journey or more; and none of the known
[312] rancherias or jacales of more persistent use are nearer than 4 to 10
miles from the fresh water by which their occupants are supplied.
Probably the most persistently occupied rancherias of the last half
century have been those located from time to time near Costa Rica,
yet even these were seldom occupied by the same group for more than
a fortnight or possibly a month, and were often vacated within a day
or two after erection. Still more temporary camps intervene between
jacales, and their sites may be seen in numbers in the neighborhood of
the better-beaten paths, or along the shores, or even over the trackless
spall-strewn plains; they may be merely trampled spots, sparsely
strewn with oyster shells and large bones gnawed at the ends, usually
in the lea of a shrub or rock; in places of small shrubbery or exceptionally
abundant grass there may be two or three or perhaps half a
dozen "forms" (suggesting the temporary resting places of rabbits), in
which robust bodies nestled and shrugged themselves into the warm
earth and under the meager vegetation. Rarely there are ashes and
cinders hard by, to mark the site of a tiny fire, and more frequently
battered and stained or greasy bowlders record their own use as meat-

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[1] The term *Amerind* (with the self-explanatory mutations *Amerindian*, *Amerindic*, etc.) has been established by the Anthropological Society of Washington as a convenient collective designation for the aboriginal American tribes (American Anthropologist, new series, vol. 1, 1899, p. 582).

blocks or metates, though it is manifest that most of the camps were
fireless and many foodless. It is particularly noteworthy that even 361
the more temporary resting-places are seldom if ever less than a mile
or two from the nearest fresh water. In short, the Seri are not a domi- [312]
ciliary folk, but rather homeless wanderers, customarily roving from
place to place, frequently if not commonly sleeping where overtaken
by exhaustion or storm, ordinarily slumbering through a part of the
day and watching by night, habitually avoiding fresh waters save in
hurried and stealthy visits, and apparently gathering in their flimsy
huts only on special occasions.

In conformity with their rovinguess the Seri are notable burden-
bearers. They habitually carry their entire stock of personal belong- 482
ings (arms, implements, utensils, and bedding), as well as their stock
of food and—weightiest burden of all—the water requisite for pro-
longed sustenance amid scorching deserts, in all their wanderings, the
water being borne chiefly by women, in ollas, either balanced on the
head singly or slung in pairs on rude yokes like those of Chinese coolies.
And they have never grasped the idea of imposing their burdens on [231]
their bestial associates; their coyote-curs are not harnessed or even
led; when they surround and capture horses, burros, and kine they 224
make no use of ropes, never think of mounting even when pursued by 177
vaqueros, but immediately break the necks or club out the brains of
the beasts, perchance to tear the writhing body into quarters and flee
for their lives with the reeking flesh still quivering on their sturdy
heads and brawny shoulders—and scores of vaqueros agree in the
affirmation (wholly incredible as it would be if supported by fewer wit- [481]
nesses) that even when so burdened the Seri skim the sand wastes of
Desierto Encinas more rapidly than avenging horsemen can follow.

The hardly conceivable fleetness of the Seri is conformable with their 177
habitual rovingness and their ability as burden-bearers; and this 231
faculty is established by cumulative evidence so voluminous and con- 481
sistent as to outweigh the presumption arising from the standards 857
attained among other peoples. A few minutes after they were photo-
graphed, the group of boys shown in plate XVI, with several others of
about the same size, provided themselves with a stock of their favorite
human-hair cords, "rounded up" a dozen mongrel coyote-dogs haunting
the rancheria at Costa Rica, and herded the unwilling animals toward
a shrubbery-free space a quarter of a mile away, in order to rope them
in imitation of the work of the Mexican cowboys earlier in the morn-
ing. From time to time as they went a frightened cur sneaked or
broke through the cordon of boys, and made for distant shrub-tufts at
top speed; yet in every case a boy darted from the ring, headed off
the animal within one or two hundred yards, and lashed it back to its
place. On arriving at their miniature rodeo the boys widened their
ring, and at a signal scattered and frightened the dogs; then, when
the fleeing animals had a fair start, each selected his victim and fol-

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481 lowed it, yelling and swinging his light lasso, until, after much doubling [177] and dodging and many unsuccessful casts, he caught and dragged the howling beast back to the open; and it was only after half a dozen [231] repetitions that enough dogs had escaped to spoil the sport. As the boys lounged chattering back toward the rancheria their course lay between two clumps of the usual desert shrubbery, so placed that when the first was obliquely left and 40 or 50 feet distant from them, the other was obliquely right and 100 feet away. At this point a bevy of small birds (perhaps blackbirds—at any rate corresponding to blackbirds in size and flight) fluttered suddenly out of the nearer clump toward the more distant one, when, too instantaneously for the untrained eye to catch exchange of signal or beginning of movement, the boys lunged forward in a common effort to seize the birds; and though none were entirely successful, one exultantly displayed a tuft of feathers clutched by his fingers as the bird darted into and through the thorny harbor. When the distances were paced it was found that, although the birds had the advantage of the start, the boys covered at least 90 per cent of their distance in the same time; while the spontaneity of the impulse demonstrated habitual chase of flying game under fit conditions.

124 While obtaining the Seri vocabulary with Mashém's aid, advantage was taken of every opportunity to secure collateral information concerning the actual use of the terms, and thereby of gaining insight into the tribal habits. Through his naive explanations, usually repeated 224 and corroborated by the elderwoman of the Turtle clan (Juana Maria) and others of the tribe, it was learned that half-grown Seri boys are 857 fond of hunting hares (jack-rabbits); that they usually go out for this purpose in threes or fours; that when a hare is started they scatter, one following it slowly while the others set off obliquely in such manner as to head it off and keep it in a zigzag or doubling course until it tires; and that they then close in and take the animal in their hands, frequently bringing it in alive to show that it was fairly caught—for it is deemed discreditable, if not actually wrong, to take game animals without giving them opportunity for escape or defense by exercise of their natural powers. Similarly, Mashém described the chase of the bura 224 and other deer as ordinarily conducted by five persons (of whom one or two may be youths), who scatter at sight of the quarry, gradually surround it, bewilder it by confronting it at all points, and finally close in either to seize it with their hands, or perhaps to brain it with a stone or short club; the former being held the proper way and the latter a partial failure. This hunting custom, described as a commonplace by Mashém, is established by the vaqueros who had frequently witnessed it from a distance; and the same extra-tribal observers described still more striking feats of individual Seri hunters: Don Manuel, son of Señor Encinas, and Don Ygnacio Lozania were endeavoring to train to work a robust Seri (one of a band sojourning temporarily at Costa

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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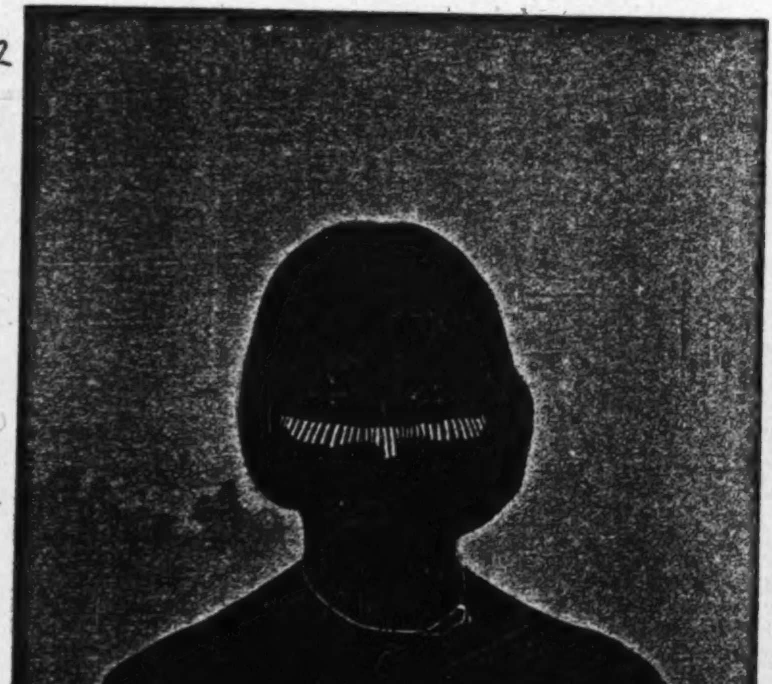

"JUANA MARIA," SERI ELDERWOMAN

[p. 150 A]

Rica) noted for his prowess in hunting. One hot afternoon he begged 224
relief from his tasks, saying the spirit of catching a deer had hold on
him; and he was excused on condition that the deer be brought entire
to the rancho. Two hours later he was seen driving in a full-grown
buck; on approaching the rancho the terrified animal turned this way
and that, describing long arcs in wild efforts to avoid the human habitation;
yet the hunter kept beyond it, heading it off at every turn and
gradually working it nearer, until, at a sudden turn, he was able to rush
on it; whereupon he caught it, threw it over his shoulders, and ran in to
the rancho with the animal still struggling and kicking off its overheated
hoofs.

Señor Encinas himself, with Don Andrés Noriega and several other
attachés, vouch for the catching of a horse by a Seri hunter in still [648]
more expeditious fashion: one of the horses belonging to the rancho
was exceptionally fat, and hence exceptionally tempting to the Seri
band (and at the same time worthless to the vaqueros); the chief
begged for it persistently until, wearied by his importunities, the
ranchero offered the horse to the band on condition that a single one
of them should catch it within a fixed distance (about 200 yards) from
the gateway of the corral—and the offer was promptly accepted. With
the view of making the test of fleetness fair, a vaquero was called in to
frighten the horse and start him running around the interior of the
corral, while a boy stood by to drop the bars at the proper moment, the
Indian standing ready outside the gateway; when the animal had
gained its best speed the bars were dropped and it bolted for the open
plains—but before the 200-yard limit was reached the hunter had overtaken
it, leaped on its withers, caught it by the jaw in one hand and
the foretop in the other, and thereby thrown it in such manner as to
break its neck. Knowing of these and other instances, L. K. Thompson,
of Hermosillo, undertook arrangements for publicly exhibiting Seri
runners as deer catchers at different expositions during the nineties;
but his arrangements failed, chiefly because of the anticipated (and
probably underestimated) difficulty of taming the Seri sufficiently for
the purpose.

About 1893, Señor Encinas and several attendants left Costa Rica 481
one morning for Hermosillo, leaving at the rancho, among others, a
Seri matron with a sick child nearly a year old; in the evening (as
they learned later) the child was worse, and the matron took the trail
about dusk, in the hope of finding a cure in the white man's touch or
other medicine—and at dawn next morning she was at Molino del
Encinas, 17 leagues (nearly 45 miles) away, with her helpless child
and a peace offering in the form of a hare, which she had run down and
caught in the course of the journey. And the matrons, with children
astride their hips and water-filled ollas balanced on their heads, and [184]
all their goods and chattels piled on their backs, habitually traverse
Desierto Encinas from the sea to Costa Rica (some 30 miles), or from
Costa Rica to the sea, in a night.

Examples of Seri fleetness and endurance might be multiplied in-
481 definitely, and many of still more striking character might be adduced;
but these instances, all attested by several witnesses, all corroborated
by independent facts, and all consistent with the observations of the
1894 expedition, seem fairly to represent one aspect of the pedestrian
habit of the tribe.

A trait of the Seri hardly less conspicuous than their pedestrian
412 habit is habitual use of hands and teeth in lieu of the implements
characteristic of even the lowly culture found among most primitive
tribes. Perhaps the most nearly universal implement is the knife—at
first of shell, tooth, bone, or wood, later of stone, and last of metal—
and hardly a primitive tribe known from direct observation or from
relics has been found independent of this most serviceable implement;
yet the Seri may be described with reasonable accuracy as a knifeless
folk. Awls and marlinspikes of bone and wood, shell cups, and pro-
[172] tolithic mullers or hammers are found in numbers in their hands, on
their rancheria sites, and in their ancient shell accumulations, while
rudely chipped stone arrowpoints are sparsely scattered over their
range; yet not a single knife of stone or other wrought substance has
[439] been found in their territory or in their possession, save for an occa-
sional metal knife obtained by theft or barter. And the habit of dis-
pensing with this primary implement is attested both by everyday
customs and by the traditions and chronicles concerning the tribe. Thus,
various observers (notably Hardy) have recorded the features and
uses of balsas, harpoons, ollas, etc, yet no records of cutting imple-
ments have been found; similarly the chronicles contain records of
[439] barter between the Seri and the Sonorenses through which the savages
acquired aguardiente, manta, garments, sugar, grain, etc, yet no record
is known of the leading articles of exchange to practically all other
tribes of the continent, viz, cutlery; and in like manner the local tradi-
tions recount the constant desire of the Seri for liquor and tobacco, sac-
charine and other food substances, clothing or material for making it,
tin cups, lard-cans, and other metallic utensils, as well as nails for
harpoons and hoop-iron for arrowpoints, in addition to firearms and
ammunition; yet the recounters are significantly silent on the subject
of knives.

Conformably, the 60 Seri gathered near Costa Rica in 1894 made it
their business to pick up or beg all sorts of industrial products and
materials, yet apparently did not possess so many as a dozen knives
in the entire band; and while protolithic implements, ollas, shell
cups, paint-stones, etc., were seen in constant use, none of the men,
women, or children were observed to use knives for cutting meat or for
any other customary purpose. Among the supplies laid on top of the
264 jacal shown in plate x, to keep them out of the way of the dogs, was a
hind leg of a horse, from femur to hoof (some three days dead and still

ripening); most of the larger muscles were already gnawed away, 264
leaving loose ends of fiber and strings of tendon clinging to the bone,
the condition being such that the remaining flesh might easily have
been cut and scraped away by means of a knife; yet whenever a warrior or woman or youth hungered he or she took down the heavy joint,
squatted or sat on the ground with back to one side of the doorway,
held the mass at the height of the mouth, and gnawed, sucked, and
swallowed, frequently tearing the tissue by twisting and backward
jerks of the head, and not only masticating, but swallowing the free
ends of tendons still attached to the bone. This process was varied
only by seizing with the hands and tearing off a strip of flesh or skin
already loosened by the teeth; and it was continued until the bones
were practically clean, when they were wrenched apart by the stronger
men in order that the cartilaginous cushions and epiphyses might be
gnawed away. The only approach to cooking or carving was a parboiling of the foot, after the leg was wrenched off at the hock, until the [252]
hoof was sufficiently softened to be knocked off with the protolithic
hupf[1] shown in plate XLIII, when half a dozen matrons and well-grown maidens gathered about to gnaw the gelatinous tissue (already
softened by incipient decay as well as by the parboiling) investing the
coffin-bone. The entire procedure in this as in many other cases proclaimed the absence of knife-sense. The Caucasian huntsman does not 412
have to think of his knife when game is to be bled or skinned or dissected; his habit-trained hand knows where to find the implement, how
to seize it, and in most cases how to wield it advantageously; but the
Seri hand possesses no such cunning, and uses the knife only clumsily
and at second thought, if at all. The Seri huntsman, on the other 516
hand, does not have to think of nails and teeth, for they are trained
and coordinated by hereditary habit to spontaneously act in unison and
with the utmost possible or needful vigor; while the Caucasian at least
has completely lost the claw-and-teeth instinct of offense and defense.

Conformably with their striking independence of knives, the Seri are
conspicuously unskilful in all mechanical operations involving the use
of tools. Their most elaborate manufacture is the balsa, made from
reeds broken at the butts and with the leaves and tops removed by the [501]
hands or by fire, bound together with hand-made cords; next in elaborateness come the bow and arrow, normally made without cutting tools; [411]
then follows their fictile ware, which is made wholly by hand, without
aid of the simple molds and paddles and other devices used by neigh- [323]
boring tribes; while their primitive fabrics were apparently of hand-extracted fibers, twisted and woven wholly by hand, with the aid of [286]
wood or bone perforators in sewing and possibly in weaving. Practically the Seri possess but a single tool, and this is applied to a peculiarly wide variety of purposes—it is the originally natural cobble used 412
for crushing bones and severing tendons, for grinding seeds and

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[1] Defined postea, p. [illegible].

412 rubbing face-paint, for bruising woody tissue to aid in breaking okatilla
poles for house-frames or mesquite roots for harpoons (both afterward
finished by firing), and on occasion for weapons; and this many-functioned
tool is initially but a wave-worn pebble, is artificially shaped
only by the wear of use, and is incontinently discarded when sharp
edges are produced by use or fortuitous fracture. The hupf is supplemented
chiefly by the simple perforator of mandible or bone or fire-hardened
wood; and these two primitive implements, together with
molluscan shells in natural condition, apparently serve as the primary
tools for all the mechanical operations of the tribe.

The dearth of tools and the absence not only of knives but of knife-sense
726 among the Seri illumine those traditions of Seri fighting made
tangible by the tooth-torn arm of Jesus Omada; for they explain the
alleged recourse of the Seri warriors to nature's weapons, used in the
centripetal fashion characteristic of nascent intelligence.

186 The Seri are distinguished by another trait hardly less striking than
the pedestrian habit, and even more conspicuous than the tooth-and-nail
habit with the correlative absence of tool-sense; the trait is not
tangible enough for ready definition or description in terms (of course
because so unusual as not to have bred words for its expression), but
is akin to—or, more properly, an exceeding intensification of—race-pride
in all its protean manifestations; it may be called *race-sense*.
Like other primitive folk, the Seri are self-centered (or egocentric) in
individual thought, i. e., they habitually think of the extraneous phenomena
of their little universe with reference to self, as in the labyrinth
of consanguineal relationship extending and ramifying from the speaker;
furthermore, they typify primitive culture in their collective thinking,
which is tribe-centered (or ethnocentric), i. e., they view extraneous
things, especially those of animate nature, with reference to the tribe,
like all those lowly folk who denote themselves by the most dignified
terms in their vocabulary and designate aliens by opprobrious epithets;
but the Seri outpass most, if not all, other tribes in dignifying
themselves and derogating contemporary aliens. Concordantly
[826] with this habitual sentiment, they glory in their strength and swiftness,
and are inordinately proud of their fine figures and excessively
vain of their luxuriant locks—indeed, they seem to exalt their own
bodies and their own kind well toward, if not beyond, the verge of
inchoate deification. The obverse of the same sentiment appears in
186 the hereditary hate and horror of aliens attested by their history, by
their persistent blood-thirst, and by the rigorous marriage regulations
609 adapted to the maintenance of tribal purity; for just as their highest
virtue is the shedding of alien blood, so is their blackest crime the
transmission of their own blood into alien channels. The potency of
[648] the sentiment is established by the unparalleled isolation of the tribe
after centuries of contact with Caucasians, by their irreducible love of
native soil, by their implacable animosity toward invaders, and by

I: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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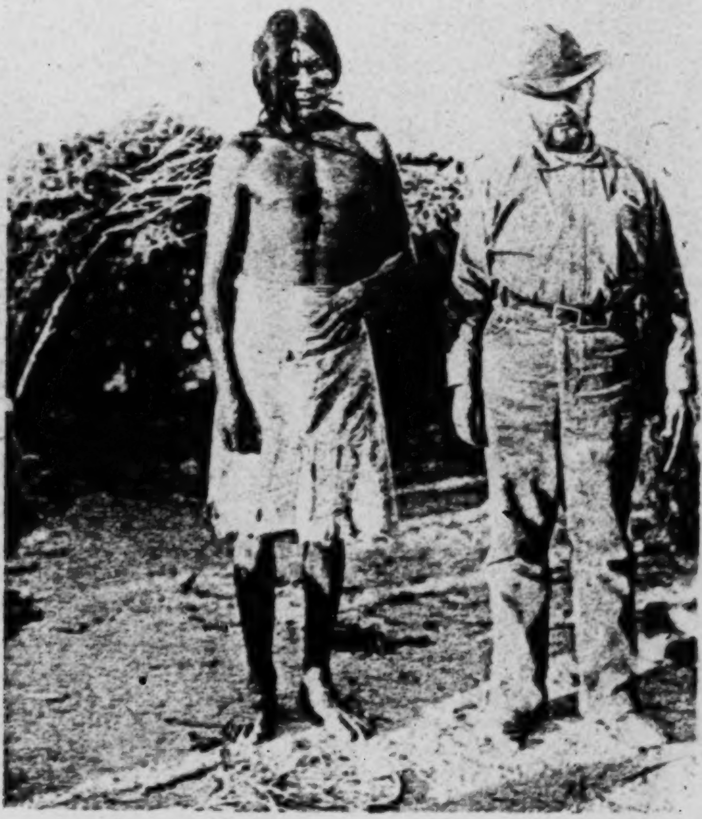

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TYPICAL SERI WARRIOR

[p. 154 A]

their rigorously maintained purity of blood; it is manifested in their 186
commonplace conduct by a singular combination of hauteur and ser- 609
vility, forbidding association with aliens on terms of equality. The 648
entire group at Costa Rica in 1894 were on good behavior, partly, no doubt, for profit, partly because they were at peace bought by bloodshed; yet they kept an impassable gulf between themselves and the Caucasians, and a still wider chasm against the Papago and Yaqui. 186
They came to the tanque, usually in groups, rarely alone, always alert; 609
especially when alone or in twos or threes, they moved slowly and stealthily in their peculiar collected and up-stepping gait, often stopping, always glancing furtively with roving eyes, and bearing a curious air of self-repression—as of the camp-prowling coyote who seems to hold down his instinctively bristling mane by voluntary effort. And the visitor to their rancheria sent a wave of influence before as his approach was noted; laughter ceased, languor disappeared, and a forced, yet sullen, amiability took their place, though the children and females edged away; if he appeared unexpectedly or came too close, the children and younger adults simply flitted like young partridges, while the elders stiffened rigidly, with bristling brows and everting lips and purpling eyes, perhaps accompanied by harsh gutturization—indeed the curiously canine snarl and growl, often evoked by the stranger unintentionally, betrayed the bitterness of Seri antipathy toward even the most tolerable aliens. Every human is panoplied in a personality, perhaps intangible but none the less real, which repels undue approach and fixes limits to familiarity on the part of strangers, friends, kinsmen, and mates, according to their respective degrees of mutually elective affinity; but the Seri are so close to each other and so far from all others that they are collectively panoplied against extratribal personalities even as are antipathetic animals against each other —and the Seri can no more control the involuntary snarl and growl at the approach of the alien than can the hunting-dog at sight or smell of the timber-wolf.

While the highly developed traits represented by pedestrian habit 461
and hand-and-tooth habit and segregative habit expressing race-sense are conspicuous during exercise, each carries an equally well-marked obverse. Thus, while the Seri are known as runners par excellence in a region of runners, and were named by aboriginal neighbors from their spryness of movement, they have been no less notorious among the Caucasian settlers of two generations for unparalleled laziness—for a lethargic sloth beyond that of sluggish ox and somnolent swine, which was an irritating marvel to the patient padres of the eighteenth century, and is today a byword in the even-tempered Land of Mañana; concordantly the sinewy hands and muscular jaws are noticeably inert during the intervals between intense functionings, are practically free from the spontaneous or nervous movements of habitually busy persons, and contribute by their immobility to the air of indolence or languor which

461 so impressed padres and rancheros; concordantly also, the manifestations of race hate, doubtless culminating among warriors on the warpath, are strongly contrasted with the abject docility of the Seri groups when at peace and in camp near Costa Rica and other ranchos—a docility far exceeding that of the Papago, whose personal dignity is an ever-present possession, or that of Yaqui, whose strong spirit so often breaks the curb of Caucasian control. So the observer of the Seri is impressed by the intensity of functioning along lines defined by their characteristic traits, and equally by the capriciousness of the functioning and the remarkably wide range between activity and inactivity which render them aggregations of extremes—the Seri are at once the swiftest and the laziest, the strongest and the most inert, the most warlike and the most docile of tribesmen; and their transitions from rôle to rôle are singularly capricious and sudden. At the same time the observer is impressed by the relatively long intervals between the periods of activity; true, the intense activity may cover hours, as in the chase of a deer, or days, as in a distant predatory raid, or perhaps even weeks, when the tribe is on the warpath; yet all the known facts indicate that far the greater portion of the time of warriors, women, and children is spent in idle lounging about rancherias and camps, in lolling and slumbering in the sun by day and in huddling under the scanty shelter of jacales or shrubbery by night—i. e., when their activity is measured by hours, their intervals of repose must be measured by days.

000 Summarizing those somatic traits connected with habitual functioning, the Seri may be considered as characterized by (1) distinctive pedestrian habit, (2) conspicuous hand-and-tooth habit correlated with defective tool-sense, and (3) pronounced segregative habit correlated with a highly specialized race-sense; yet they are characterized no less by extreme alternations from the most intense functioning to complete quiescence—the periods of intensity being relatively short, and the intervals of quiescence notably long.

14 On reviewing the more conspicuous somatic structures and functions jointly, they are found to throw some light on their own development, and hence on the natural history of the Seri tribe.

Certain characteristics of the tribe strongly suggest lowly condition, i. e., a condition approaching that of lower animals, especially of carnivorous type; among these are the specific color, the centripetally developed body, the tardy adolescence, the defective tool-sense, the distinctive food habits (especially the consumption of raw offal and carrion), the independence of fixed habitations, and the extreme alternations between the rage of chase and war and the quiescence of sluggish repose. But these primitive characteristics are opposed or qualified by such features as the noble stature, the capacious and shapely brain-case, the well-developed hands, and the considerable intelligence revealed in native shrewdness as well as in organization and belief. Collectively the characteristics are in some measure incongruous; yet

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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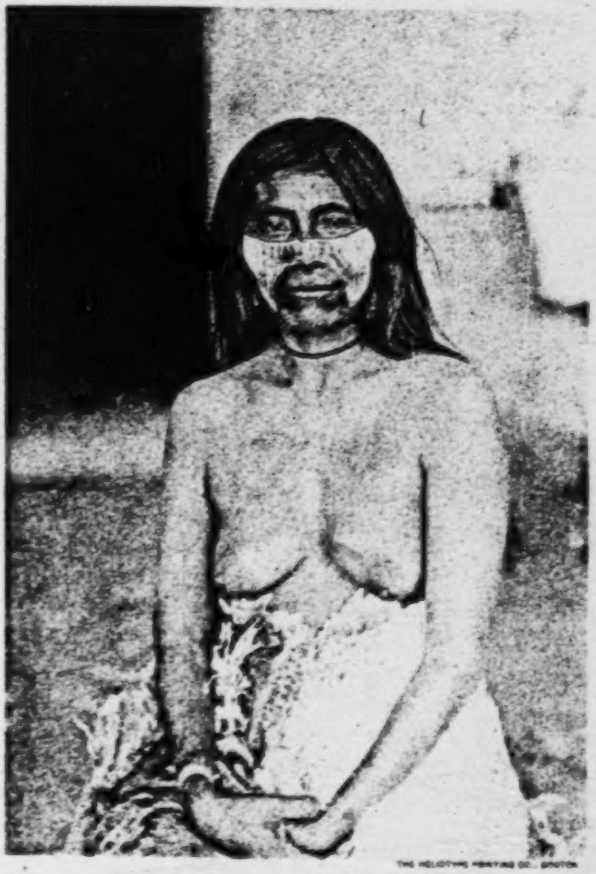

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TYPICAL SERI MATRON

[p. 156 A]

all are at least fairly compatible with the inference that the tribe is 14
exceptionally (if not incomparably) low in the scale of general human development, yet at the same time highly specialized along certain lines; and the inference in turn is corroborated by the coincidence between the special lines of development and the peculiar conditions of environment characterizing the habitat of the tribe.

A striking correspondence between Seri physique and Seri habitat is 182
revealed in the pedal development, with the attendant development of 147
muscle and bone, lung capacity, and heart power, together with other faculties involved in the pedestrian habit. Seriland is a hard and inhospitable home; sea-food is indeed abundant and easily taken, but water is terribly—often fatally—scarce, and obtainable only by distant journeying from the places of easy food supply; moreover, the monotony of the diet is alleviable only by extensive wandering for the collection of vegetal products or severe chase after land animals; while the warlike spirit, apparently inherited from a still less humane ancestry and fostered by the geographic isolation, combines to keep the tribe afoot, avoiding waters, conducting raids, and moving constantly from place to place in the endless search for safety. There is a widespread Sonoran tradition that the Seri systematically exterminate weaklings [888]
and oldsters; and it is beyond doubt that the tradition has a partial foundation in the elimination of the weak and helpless through the literal race for life in which the bands participate on occasion. A parallel eliminative process is common among many American aborigines; the wandering bands frequently undergo hard marches under the leadership of athletic warriors with whom all are expected to keep pace, and this leads both to desertion of the aged and feeble and to increased strength and endurance on the part of the strong and enduring; yet it would appear that this merciless mechanism for improving the fit and eliminating the unfit attains unusual, if not unequaled, perfection among the Seri. Now pedal development is one of the special processes of peripheral (or centrifugal) functioning and growth involved in the general process of *cheirization*, which, coordinately with cephalization, defines human progress;[1] and this developmental process explains the specialization of the Seri along one or more lines, and connects the special development directly with environing conditions.

A notable correspondence between structure and function, of such sort as to reflect the habit and habitat, appears in the conspicuous manual development of the Seri. Enjoying a climate too mild to make houses necessary, finding animal food too plentiful to necessitate elaborate contrivances for the chase or milling or other devices for reducing vegetal food, provided by nature with material (in the form of carrizal) for an ideally suitable water craft, barred by geographic boundaries from neighboring tribes, and having neither material for nor interest in commerce, the denizens of Seriland were never forced into the way of mechanical development; yet their simple industries, involving as they

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[1] The Trend of Human Progress, American Anthropologist, new series, vol. 1, 1899, p. 401.

147 to swift stroke and strong grasp and dexterous digitation, are mainly such as urge manual development more strenuously than would be 182 normal among tribesmen connected with their environment through the medium of tools. The demand for manual strength and skill is intensified among the Seri by both natural and domestic conditions; the ever-ready (and almost the sole) material suitable for simple adjunct to the hand abounds in the form of wave-worn cobbles; these cobbles are easily usable in such wise as to serve all ordinary purposes, and their abundance discourages the production of more highly differentiated tools; while their habitual use promotes manual strength and deftness, coupled with that digital freedom (required, for example, in grasping a ball) which most clearly distinguishes the human hand from the subhuman paw. Conjoined with these natural conditions are demotic demands tending to cultivate manual fitness and eliminate the manually unfit; for, in addition to the direct industrial premium on dexterity, through which the dexterous survive while the clumsy starve, there is a special premium growing out of the marriage custom, through which [143] only the manually efficient (and at the same time morally acceptable) are put in the way of leaving lines of descendants.[1] Naturally, in view of the combination of factors, all traceable directly or indirectly to environmental conditions, the Seri afford a peculiarly striking example of cheirization extended to an entire tribe (if not to a genetic stock of people)—indeed the remarkably developed Seri hands and feet first suggested the importance of this process of human development and led to its formal characterization.

Accordingly, the robust-bodied and slender-limbed yet big-fisted and 143 big-footed Seri seem to be adjusted, so far as several of their more striking somatic characters are concerned, to distinctive habits them-182 selves reflecting a distinctive habitat; and the coincidences appear to reveal and establish the law of interaction between the human organism and its environment—an interaction effected through the habits and hence through the normal functioning of the individual organisms as constrained through their collective relations. And recognition of the 147 law of interaction opens the way to consideration of other correspondences between structures and functions and environing conditions.

143 Conspicuous among the more strictly functional traits of the Seri is 182 the intensity of action characteristic especially of the warriors, though in less degree of the entire tribe—an intensity made all the more strik-3/12 ing by contrast with the extreme inertness between stresses. Manifestly the capacity for concentrated effort is in harmony with the tribal habits, themselves reflecting habitat. The resource of prime importance in Seriland—that which directly and constantly conditions the very existence of human inhabitants—is potable water. This prime source of life is too heavy to be transported and too unstable to be stored with the facilities of primitive culture, yet it is always within reach of an organism strong enough to journey ten or twenty or fifty

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[1] The marital customs of the tribe are described postea, pp. [illegible]

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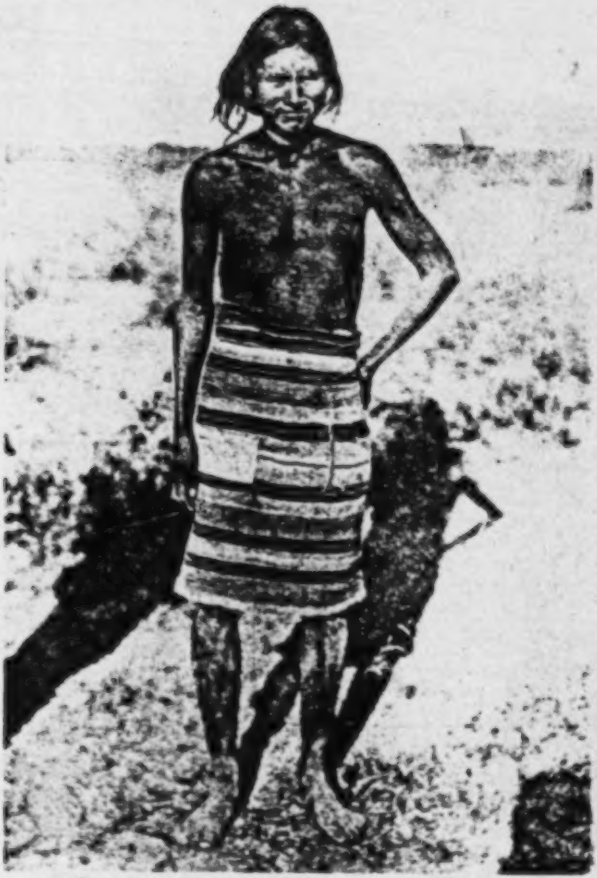

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SERI RUNNER

[p. 158 A]

miles in search of it, and acute enough to follow trails and indications. 143
Naturally the meager water-supply serves as a mechanism for sorting out 182
and preserving the strong and the acute, and for eliminating the weakly [312]
and the dull; and hence the tribe have developed a faculty, or perhaps
a potentiality, of distinctive sort—the potentiality of providing against
thirst-death by a reserve power in the organism itself rather than in
the form of mechanical devices such as characterize higher culture.
Quite similar are the relations to the resource of second importance,
i. e., ordinary food. Habituated to dispensing with storage and trans-
portation of their primary resource, and accustomed to finding food [251]
whenever forced to sufficiently active effort to obtain it, the Seri have
never grasped that first principle of thrift expressed in the accumula-
tion of food supplies; and accordingly they intuitively rely on success-
ful fishing or chase or search of vegetal edibles for sustenance, and
habitually delay effort until they are stirred into activity by the pangs
of hunger. Naturally this improvidence serves as another mechanism
for perpetuating families of stored vitality, and especially those able
to prevail over swift or strong or cunning quarry by sustained vigor 143
and alertness after prolonged deprivation; and the effect of this mech-
anism, too, is to develop a reserve power in the organism itself, in lieu 147
of the material reserve made through thrift in higher culture. Similar 182
in their consequences are the relations of the individual organisms to
the third industry of Seriland, i. e., navigation of the gale-swept and 502
tide-troubled waters. Even the buoyant balsa can not weather the
williwaws or ride the tiderips of El Infiernillo without exercise of the
utmost strength and skill on the part of the navigators; while the often
persistent storms may delay for days embarkation on voyages in quest
of fresh water or food. Naturally, the frequent delays and not infre-
quent perils of such navigation constitute a mechanism for selecting
navigators possessed of reserve powers adequate to meet desperate
emergencies with vigor and judgment even after enervating waits for
wind and tide, while those not so well endowed are either brought up
to standard in their hard training school or expelled from their class by
drowning or dashing on the rocks, as may happen; so that the effect of
this mechanism also is to preserve individuals and perpetuate genera-
tions characterized by reserve power, and hence to develop latent
potentiality in the tribe. Now, the normal product of these and other 143
natural mechanisms immediately reflecting environmental conditions 147
is capacity for spurts, or for intense functioning under severe stress,
despite accentuation of the stress by thirst or hunger or exhaustion, or by 182
all combined—i. e., the effect of habitat and habit is to produce precisely
such a somatic regimen as that so conspicuously displayed by the Seri
folk. So the intensified activity with long intervals of inertness, simu-
lating the habits of carnivorous and some other lower animals, and hence [461]
suggesting primitive condition, would appear to be largely a phyloge-
netically acquired character expressing specific adjustment to environ-
ment.

147 182 To the actual observer of the Seri in his prime there is an indefinable but none the less impressive harmony between the intense regimen and the trenchant structural development characteristic of the tribe—a harmony like unto that felt by naturalist and artist alike in viewing at once the clean-cut form and vigorously easy mobility of tiger or thoroughbred horse; and simple inspection of the lithe limbs and body-muscles stirs into living realization a half-felt inference from many facts—the obvious and indubitable inference that they are stress-shaped structures. Accordingly, the concentrated and robust bodies, the shapely jaws, the well-chiseled arms, and the statuesque legs of the Seri, no less than their powerful hands and bulky feet, direct special attention to the axiom that somatic structures are the product of exercise, and indicate with convincing clearness that the structures are trenchantly developed because of the supreme intensity of the creative exercise. It may be impracticable to outline in terms of metabolism the precise processes of waste and repair in organs and organisms, or to define the relative periods of action and assimilation (or of catabolism and anabolism) best adapted to the development of motile tissue; yet the external facts of all bodily growth demonstrate the efficiency of alternating effort and repose, while the characteristics of highly developed animal bodies (including those of the Seri) demonstrate that the most beneficial exercise is that of relatively brief but intense stresses alternating with relatively long intervals of sluggish movement or complete repose. Moreover, the facile metabolism involved in the widely alternating regimen implies exceptional somatic plasticity of the sort normally accompanying youth and attending tissue growth; and this persistent bodily plasticity is in harmony with the peculiarly dilatory maturation characteristic of the Seri tribe. So the animal-like bodies of the Seri, no less than their animal-like movements, which at first sight suggest primitive condition, may safely be held in large measure to reflect specific habits of life, themselves reflecting a distinctive habitat.

144 186 Still more suggestive to the observer than the well-molded structures and the intense functioning with which they are conjoined are those elusive yet persistent characteristics of the Seri comprised in their distinctive race sense—characteristics ranging from overweening intratribal pride to overpowering extratribal hatred. Even at first blush it would seem obvious that the tribal isolation, itself the reflection of environment, would necessarily tend toward a segregative habit with concomitant hostility toward aliens; yet the race-sense of the Seri so far transcends that of other segregated tribes as to suggest the existence of a specific cause. So, too, it would seem obvious that the race feeling gathers about a corporeal nucleus in the form of the race-type exemplified in the heroic stature, the shapely face, the mighty chest, the luxuriant hair, the well-modeled muscles, the powerful feet and hands, the "collected" carriage, and the stored vitality, which (as already indicated) synthesize the environmental interactions of generations; yet the actual student can not avoid the impression that the

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SERI MATRON

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race-sense dominates the race-type—that the Seri are farther away 144
from neighboring tribes in feeling than in features, in function than in structure, in mind than in body. Now, in seeking the sources of this 186
distinctive (not to say specific) race-sense, several suggestions arise. Naturally the first suggestion is that of simple sexual selection, the 143
(assumptive) analogue of an important factor in biotic evolution; but the suggestion is at once apparently negatived by the fact that all the mature men and women are married and have families of children proportionate to their ages. True, undesirable fiancées may be expelled from the tribe, or even executed (as intimated by neighboring Sonorenses); yet there is little evidence that either method of selection is employed among the Seri more largely than among other peoples; and, as all recent researches indicate, the higher peoples at least have risen above the plane of sexual selection per se as an effective factor in somatic development. A second suggestion arises in the axiom (vivified by realization of the connection between Seri movements and Seri structures) that perfected organs are the product of stressful functioning—indeed, the suggestion is but the extension of the axiom from the individual to the stirp and the group. In developing the suggestion it is convenient to divide the career of the stirp into periods defined by the successive wax and wane of vitality in its most significant manifestations; and this may be done in terms of successive individual lifetimes in their three successive aspects of (1) youth, (2) maturity, and (3) senility, in which the dominant constructive functions are respectively (1) somatic growth, (2) collective growth (comprising both procreation and the accumulation of artificial possessions), and (3) dissipation of somatic vitality and distribution of extrasomatic accumulations (generational as well as material and intellectual). Now, it is a commonplace in every stage of culture that vital capacity, and also the inherent sense of kind manifested in pairing, culminate in the medial portion, or prime, of individual life; and if this universal recognition is valid, it is just to hold that the career of the stirp is defined by the successive vital climaxes expressing the primes of the series of generations pertaining to the stirp. It follows that each generation must represent, not the average qualities of the entire generation past, but the qualities of the most virile and muliebrile fraction of that generation; whence it follows in turn that in general the generations must develop along the lines most prominent in the lives of each people in their prime. The process may be formulated as the *law of periodic conjugation*, under which successive generations are initiated, not at random, but at periods of culminant effectiveness in shaping the course of the stirp. The immediate application of this law to the Seri tribe is manifest, for it explains (the initial condition of isolation and the consequent incipient segregative habit being given) how and why the tribal standards have grown more definite from generation to generation, and have interacted cumulatively with the distinctive environment in such manner as continually to widen the chasm between the desert-

143 bound tribe and their alien neighbors. Yet the general application of the law leads only to a more specific application; for, just as the career of the stirp is made up of a succession of vital maxima and minima, so the lifetime of the individual, even in the median stage, is made up of a series of vital climaxes separated by relatively inert intervals; and, as recognized by every naturalist and romancist, every philosopher and poet, in every stage of culture, it is during the periods of conative domination by the master passion that the career of the individual is shaped and that the stirp-sentiment (or susceptibility to kind) culminates in intensity. It follows that the progeny of successive generations represent not merely the optimum median stage of life in which vitality and virility and muliebrity are at flood, but the very climaxes of this stage in which manhood and womanhood attain their ideals, and in which the ideals react on the physical system with unequaled intensity; it follows in turn that each generation must (in so far as intellectual tension can control long series of metabolic interactions after the manner in which short series are controlled by direct volitional exercise) incarnate the ideals of the preceding generation; whence it follows still further that in general isolated race-types tend constantly and cumulatively to increase in definiteness—at least until the somatic factors are counterbalanced by demotic relationships arising with considerable increase in population. It is true that the extent to which the incarnation of ideals is effective or even possible has not been measured; it is also true that the naturalists of the higher culture-stages commonly neglect the process; yet the occasional recognition of its positive aspect, as in Goethe's "elective affinities" and in Jacob's getting of "ringstraked, speckled, and spotted" stock (Genesis xxx, 37-41), and the practically universal recognition—more especially among primitive peoples—of its negative aspect in adverse prenatal influences, clearly indicates its importance; the fact that the ancient Greeks at once idealized in unparalleled degree, and produced unexcelled perfection in, the human form being of no small significance. Even if the measure of the incarnation of ideals be reduced to the lowest minimum consistent with common knowledge, it remains true that the progeny of successive generations are not the offspring of average parents, but of pairs at the perfection and conjugal culmination of their virile and muliebrile excellencies; so that the generations must run in courses of cumulatively increasing racial (or human) perfection, under a general *law of conjugal conation*.

143 In extending the general law of conjugal conation to the Seri, it
is found peculiarly applicable, in view of their distinctive marriage
182 custom, the effect of which is to intensify conjugal sentiments, with the
186 attendant magnification, and potential if not actual incarnation, of
ideals.[1] Accordingly there would appear to be a harmony between

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[1] The law of conjugal conation was indeed suggested by observations on the peculiar marriage custom and peculiarly developed race-sense of the Seri tribe, and it has already been applied in certain of its aspects as an explanation of the initial humanization of mankind (The Trend of Human Progress, American Anthropologist, new series, vol. 1, 1899, pp. 401-447).

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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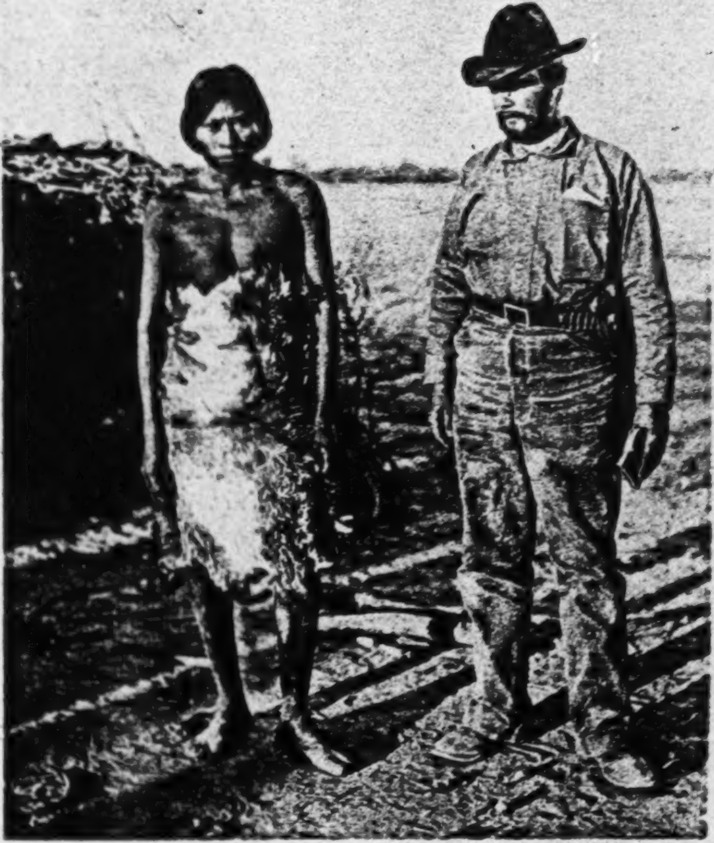

YOUTHFUL SERI WARRIOR

THE HELIOTYPE PRINTING CO., BOSTON

[p. 162 A]

Seri race-sense and Seri race-type no less delicate than that between 143
the stressful action and the stress-shaped structures of the tribe,
and while the inception of both type and feeling may be ascribed to [182]
the isolated environment, it seems manifest that both have interacted [186]
constructively and in cumulative fashion through a significant process
exemplified more clearly by this tribe than by others thus far studied.
At the same time, analysis of the harmony between type and sentiment indicates that the lowly Seri are actually, albeit unconsciously,
carrying out a meaningful experiment in stirpiculture—an experiment
whose methods and results are equally valuable to students. The Seri
gymnastic and the Seri stirpiculture are in close accord, in that both
are conditioned by initially dilatory yet ultimately intense action; the
results are equally accordant in that the one conduces toward individual vigor and the other toward a vigorous and distinctive stirp; while
the excellence of the methods (viewed from the somatic standpoint) is
attested by the magnificence of the product. Now, comparison of the
stirpicultured Seri with contemporary tribes shows that the desert-bound folk have attained unequaled somatic development, and suggests that the intuitive stirpicultural processes have been rendered
peculiarly effective through the persistence of that tribal isolation in
which the processes apparently took rise; so the race-sense of the [182]
Seri may be regarded as the product of long-continued stirpicultural [18]
processes, initially shaped by environment, yet developed to unusual
degree by somatico-social habits, kept alive largely through continuous
environmental interaction.

Summarily, the Seri are characterized by noble physique, by pecu- 14
liarly swift and lightsome movements, by great endurance coupled with
capacity for vigorous action, by animal-like symmetry and slowness of
maturation, and by various minor attributes combining with the major
features to form a distinctive race-type; and they are still more conspicuously characterized by an acute race-sense which holds them apart
from all aliens. At first sight, several of their somatic attributes seem
incomparably primitive, yet analysis of the attributes in the light of
certain laws which they exemplify better than other peoples thus far
studied indicates not so much a lack of development as an excess of
growth along purely somatic lines, with a correlative defect of development along demotic lines; and when the lines of growth are traced to
the sources and conditions, it becomes fairly clear that the aberrant
development of the tribe is merely the reflection of a distinctive environment operating (evidently) throughout a long period. In brief, the
somatic interest of the Seri seems to center in the remarkable adjustment of the tribe to a peculiar environment—an adjustment of such
delicacy as to imply interaction throughout many generations.

DEMOTIC CHARACTERS

000 The Seri, like all other peoples, are characterized by various collective attributes which vastly transcend in interest and importance the somatic attributes exhibited by the individuals. These superorganic attributes are essentially activital—i. e., they represent what the people *do* rather than what they merely *are;* and in both collective and activital aspects they serve to distinguish the human realm from the organic realm, and to afford a basis for the classification of mankind—i. e., they combine to form demotic characters.

128 The demotic characters of the Seri, like those of other peoples, may be classed as (1) esthetic, (2) industrial, (3) institutional, (4) linguistic, and (5) sophic; and in this order the essentially human attributes of the tribe (except the last named) may be described. It is a matter of deep regret that the data concerning the demotic characters of the tribe are too meager to afford more than a mere outline of their activities, and that their suggestive mythology must be passed over for the present.

SYMBOLISM AND DECORATION

FACE-PAINTING

302 One of the most conspicuous customs of the Seri is that of painting the face in designs by means of mineral pigments. Of the 55 members of the tribe shown in the group forming plate XIII, 28 (in the original photograph; a somewhat less number in the reproduction) exhibit face-painting more or less clearly, and this proportion may be regarded as typical; i. e., about half of the tribe are painted.

On noting the individual distribution of face-painting, it is found to be practically confined to the females, though male infants are sometimes marked with the devices pertaining to their mothers, as adult warriors are said to be on special occasions; and so far as observed all the females, from aged matrons to babes in arms, are painted, though sometimes the designs are too nearly obliterated by wear to be traceable. About 35 of the individuals shown in the group (plate XIII) are females; of these, fully four-fifths showed designs or definite traces of the paint, while the remaining fifth bore traces too faint to be caught by the camera; but none of the men or larger boys were painted. In the smaller group shown in plate XIV all of the females display paint, as does the small boy in the center also, while the man (husband of the middle-aged matron) reveals no trace of the symbol. The two pictures typify the prevalence and the distribution by sex of the painting.

SERI BELLE

[p. 164 A]

The painted designs vary among different individuals, but are fairly 302 persistent for each. The prevailing design at Costa Rica in 1893 was that of the aged matron known as Juana Maria (plate XVIII), with variations in detail such as that exhibited by her unmarried daughter Candelaria (the Seri belle shown in plate XXIV); next in frequency were the designs, in white and red, exhibited by the matrons portrayed in plates XX and XXII. Other designs observed are indicated in plate XXVI. The variations in individual designs are apparently due either to varying care in the application of the paint or to the degree of obliteration by wear—e. g., the withered Juana Maria sometimes put on her design askew and was negligent of details, while the blooming Candelaria greatly elaborated the details of the pattern and carefully perfected the symmetry of the whole when preparing for her full-dress sitting before the camera (plate XXIV), so that her design was then gorgeous by contrast with the nearly obliterated blur of a half-hour before. The designs are renewed every few days, especially for ceremonious occasions, and hence are practically permanent.

When grouped in relation to their wearers, the designs are found to 302 exhibit family connection. 424 Thus, Juana Maria's design is repeated, 593 with greater elaboration of detail and with a pair of supplementary marks, in that of her daughter Candelaria; the winged symbol of the Seri matron portrayed in plate XX is repeated with minor variations in that of her daughter, the Seri maiden pictured in plate XXV; while the symbols of the mother and infant daughter depicted in plate XV are essentially alike. It is noticeable, too, that in the nearly spontaneous arrangement of individuals in the group shown in plate XIII there is a tendency toward subgrouping by symbols; and it was constantly observed that the family groups gathered about particular jacales (such as that shown in plate XIV) displayed corresponding designs, though there were frequent visitors from neighboring jacales bearing other designs. Briefly, all the observed facts, as well as the supplementary information gained by inquiry, indicate that the designs are hereditary in the female line, but are susceptible of slight modification both in elaborateness of detail and in the addition of minor supplementary features.

The principal apparatus and materials used in the face-painting are 386 illustrated in plate XXVII. The chief pigments are ocher, gypsum, and the rare mineral dumortierite; the ocher yields various shades of red, ranging from pink to brown; the gypsum affords the white used in most of the designs; while the dumortierite is the source of the slightly varying tints of blue. So far as was observed, the pigments are not blended by mixing, though there is some blending due to overlapping in application. The ocher is commonly extracted and transported as lumps of [317] ocherous clay or ocherous gypsum (plate XXVII, figures 1 and 5), though it is sometimes reduced to powder and transported in bits of skin or rag, or in cylinders of cane (plate XXVII, figures 3 and 4); and it is [415]

386 prepared by trituration with a pebble or rubbing with the fingers,
usually in a shell cup. Sometimes the shell used for the purpose is the
[412] valve of a *Cardium*, which serves indiscriminately as cup, spoon, skin-
scraper, etc; but preference is apparently given to thick and strong
shells, such as the wave-worn valve of *Chama* (?), shown in plate
XXVII, figure 7, which are consecrated to the use and eventually buried
[764] with the user, together with a supply of the paint (like that illustrated
in the cane cylinder—figure 4—which was a mortuary sacrifice). The
gypsum is usually carried in natural slabs or other fragments, perhaps
rounded by wear (plate XXVII, figures 6 and 8); it is prepared by wetting
and rubbing two pieces together, the larger being reduced to
metate shape by the operation. The dumortierite was observed only
in the form of a pencil made by pulverizing the substance and mixing
with sufficient clay to give consistency. The several pigments are
302 applied wet by means of human-hair brushes kept for the purpose, the
process occupying from half an hour to three or four hours for the
more elaborate designs. So far as observed at Costa Rica in 1894, the
paints were mixed in water only; but since painting outfits found on
[386] Tiburon island in 1895 were smeared with grease, it is probable that
either water or fats may serve for menstrua, at the convenience of the
artists. Commonly the process of painting is measurably cooperative.
The matron usually depicts her device on the faces of her daughters
[593] up to the age of 12 or 15 years, when they learn to make the applications
themselves; and frequently two or more women (usually those
[476] with similar devices) work together in preparing and applying the pigments,
each laying the paint on her own face and apparently guiding
her hand partly by the sense of feeling and partly by suggestions
from her coworkers; but Candelaria and some other of the younger
women at Costa Rica frequently worked alone, aided by a mirror
in the form of a shallow bowl of water set in the shadow while the
brilliant desert glare fell full on the face.

The mines yielding the pigments were not located. The geologic con-
317 ditions are such that the ocbers are undoubtedly abundant; but it is
probable that the gypsum is uncommon and confined to a remote locality
or two, and that the dumortierite is rare and scanty here as elsewhere.
The care with which the paints are preserved, prepared, and
386 applied, the fact that they are indispensable feminine appurtenances
even on the longest journeys, and their sacred rôle in the mortuary
435 customs, all combine to indicate that they are among the most highly
prized possessions of the people and by far the most precious of their
minerals.

The sematic functions of the designs are esoteric, yet an inkling of
302 their meaning was obtained through Mashém, the interpreter at Costa
614 Rica in 1894; from his expressions it appears that the designs are
sacred insignia of totemic character, serving to denote the clans of
which the tribe is composed. But three clans were identified, and

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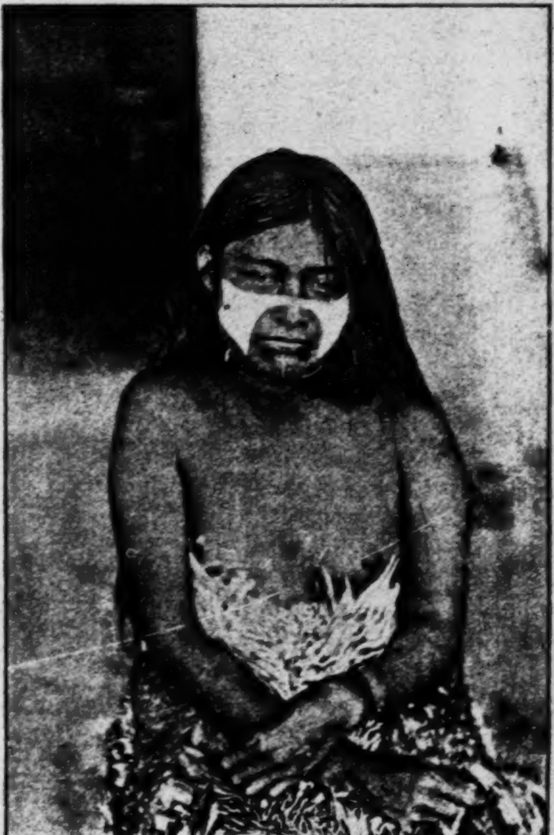

SERI MAIDEN

[p. 166 A]

these only with some uncertainty, viz, the Turtle clan,[1] denoted by the 302
symbols of Juana Maria (plate XVIII) and Candelaria (plate XXIV and 614
the upper left figure in plate XXVI); the Pelican clan, denoted by the designs of two typical matrons (plates XX and XXII) and a typical maiden (plate XXV), and probably also by those of the medio-lateral figures in plate XXVI; and (still less certainly) the Rattlesnake clan, denoted by the symbol of the lower left figure in this plate. The 302
special sematic values of the colors also are esoteric, and were not ascertained; even in the case of the simple pelican design, the difference in meaning between the solid red pattern of one group and the similar pattern of white in another group was successfully concealed. So, too, the significance of the various subordinate or supplementary devices—the distinct border-line shown in plate XX, the lower cheek devices in plate XXIV, the separate chin mark in plate XXV, the fetish-like symbols on the lower cheeks in the lower left figure of plate XXVI, etc—eluded inquiry; while some of the minor features of both form and color were sufficiently variable in the devices borne by different faces of the same family, and even in successive paintings of the same face, to suggest some individual freedom in carrying out the detail of the generally uniform designs.

The telic functions, or ultimate purposes, of the face-painting are also esoteric, though not beyond the reach of inference from the sematic functions, coupled with general facts of zoic and primitive human customs. Even at first sight the painted devices bring to mind the directive markings of lower animals defined by Professor Todd[2] and interpreted by Ernest Seton-Thompson;[3] and in view of the implacably militant habit of the Seri it would seem evident that the artificial devices are, at least in their primary aspect, analogous to the natural markings. On analyzing the directive markings of animals, it is convenient to divide them into two classes, distinguished by special function, usual placement, and general relation to animal economy: the first class serve primarily to guide flight in such manner as to permit ready reassembling of the flock; they are usually posterior, as in rabbit, white-tail deer, antelope, and various birds; and they primarily signify inimical relations to alien organisms, with functional exercise under stress of fear. The second class of markings serve primarily for mutual identification of approaching individuals; as comports with this function, they are usually facial, or at least anterior; and their functional exercise is normally connected with peaceful association—though the strongly emphasized facial symbols of the males doubtless

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[1] This tutelary may be the shark; it was described as a water monster instrumental in the creation and good for food, but the identification is not beyond doubt. Cf. p. [illegible].

[2] American Naturalist, vol. XXII, 1888, pp. 201-207.

[3] Wild Animals I Have Known, 1898, p. 119; Century Magazine, vol. LIX, 1900, pp. [illegible]. In his lectures, Mr Seton-Thompson extends his interpretations to anterior as well as to posterior markings, especially the conspicuous and persistent facial features of deer, antelope, mongrel (or ancestral) dog, etc. Such facial markings seem especially characteristic of gregarious animals; and they are peculiarly significant as social symbols rather than as mere beacons for guidance in flight.

302 blazon forth the alternative meanings of preference for peace or readiness for strife, like the calumet tomahawk of the Sioux warrior (as interpreted by Cushing). So the directive markings of the first class are substantially beacons of danger and fear, while those of the second are just as essentially standards of safety and confidence; and they may properly be designated as *beacon-markings* and *standard-markings*, respectively.[1] On seriating the two classes in terms of development, it is at once found that the beacon-markings are in large measure connected with excursive movement and are centrifugal in effect, while the standard-markings are connected mainly with incursive movement and are centripetal in effect; at the same time the latter express not only the higher intelligence, but also the greater degree of that conjustment which forms the basis of collective organization; so that the latter unquestionably represents the higher developmental stage. Now, the primary functions of these directive markings of the higher grade—signalization (or attentionization) and identification—correspond precisely with paramount needs of the alien-hating and clan-loving Seri; so that careful analysis would seem fully to justify the casual impression of functional similitude between the Seri face-painting and the directive markings of social animals.

While the first survey establishes a certain analogy between the primitive face-painting and the standard-markings of animals, an important disparity is noted when the survey is extended to individuals; for among beasts and birds the standards are usually the more conspicuously displayed by the males, while the paint devices of the Seri are confined to the females. A suggestion pointing toward explanation of this disparity is readily found in the seriation of developmental stages marked by (1) the fear-born beacon-markings, (2) the confidence-speaking standard-markings, and (3) the painted symbols; for the artificial devices coincide with an immeasurably advanced mental development, with concomitant advance in safety and peace on the one hand and in artificializing weapons on the other hand. This suggestion alone fails to explain the disparity fully, yet it raises another, growing out of the great social advancement connected with the mental development—i. e., the effect of the distinctively demotic organization of
302 the human genus as represented by the Seri people. On considering
614 this organization, it is found strictly maternal: the tribe is made up of clans defined by consanguinity reckoned only in the female line; each clan is headed by an elderwoman, and comprises a hierarchy of daughters, granddaughters, and (sometimes) great-granddaughters, collectively incarnating that purity of uncontaminated blood which is the pride of the tribe; and this *female* element is supplemented by a masculine element in the persons of brothers, who may be war-chiefs or shamans, and may hence dominate the movements of groups, but whose

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[1] The fundamental distinction is none the less valid by reason of the occasional combination of functions, as in the antelope "chrysanthemum" interpreted by Seton-Thompson.

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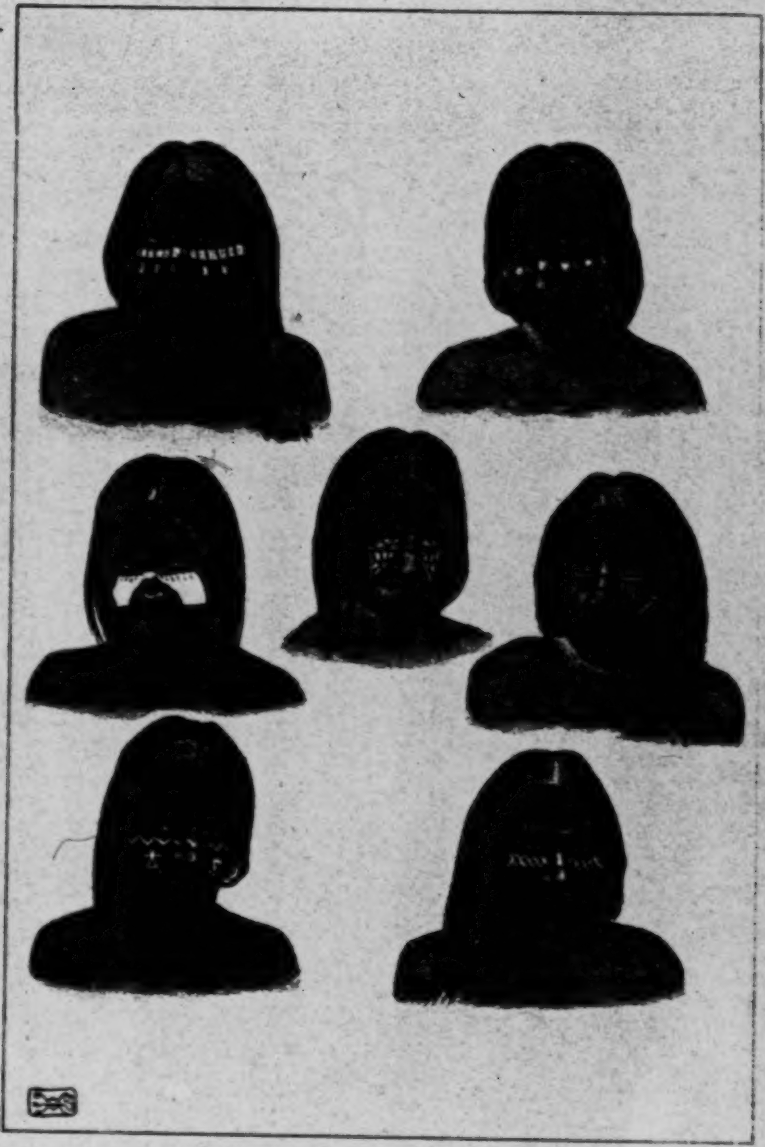

CHARACTERISTIC FACE PAINTING

[p. 168 A]

1: McGee E-5 (1894-1895) 1898 NU31 Ser! NU31

blood counts as nothing in the establishment and maintenance of the 303 clan organization. Thus the *females* alone are the blood-carriers of 619 the clans; they alone require ready and certain identification in order that their institutional theory and practice may be maintained; and hence they alone need to become bearers of the sacred blood-standards. The warriors belong to the tribe, and are distinguished by luxuriantly-flowing hair, by the up-stepping movement from which the people [562] derive their appellation, by their unique archery attitude, and by their dark skin-color; the boys count for little until they enter the warrior class; but on the females devolves the duty of defining and maintaining the several streams of blood on which the rigidly guarded tribal integrity depends.[1] Undoubtedly the blood-markings play an important rôle in courtship and marriage, but too little is known of the esoteric life of the tribe to permit this rôle to be traced.

In brief, the Seri face-painting would seem to be essentially *zoosematic*, or symbolic of zoic tutelaries, and to signify subspecific (or subvarietal) characteristics maintained by the clan organization and kept prominent by the militant habit of the tribe; at the same time it is noteworthy that the purely symbolic motive is accompanied by a nascent decorative tendency, displayed by the individual refinement of form and color in the symbol proper to each of the groups.

DECORATION IN GENERAL.

Aside from the face-painting there is a conspicuous dearth of decoration or tangible symbolism among the Seri. 304

The symbolic or decorative modification of the physique would seem to be limited to two classes of mutilations, of which one was observed at Costa Rica in 1894 while the other is apparently obsolete. The observed corporeal modification is the absence of medial superior incisors of the females, in consequence of forcible removal at a period not definitely ascertained. The interpreter at Costa Rica was uncommunicative on the subject; Don Pascual opined that the mutilation formed part of an elaborate puberty ceremonial, and this opinion would seem to be corroborated by the condition of the cranium of an immature female examined by Dr Hrdlička; but since the half-dozen adult maidens at the rancho in 1894 were free from the mutilation while all the wives bore its gruesome trace, it would seem more probable that the custom is connected with marriage. Whatever the period of the infliction, Mashém's guarded expressions seemed to indicate that it was [562] a mark of physical inferiority; and this suggestion, interpreted in the light of the Seri use of teeth as weapons of offense and defense, would seem to indicate that the mutilation is at once the badge of corporeal inferiority and a means of maintaining the physical superiority of the males—of course in that theoretically fiducial but actually forceful way characteristic of primitive culture.

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[1] The essentially zoocratic nature of Seri law and custom is set forth postea, p. [illegible].

301 [304] The second mutilation was the only corporeal modification noted by early missionaries and explorers—it was the perforation of the nasal septum for the insertion of a skewer, perhaps of polished stone (though doubtless more commonly of bone), to which swinging objects were attached. [114] One of the most useful records is that of the Jesuit, Padre Joseph Och, who described the nasal attachment as a small, colored stone suspended by cords from the perforated septum, and guarded with such jealous veneration that "one must give them at least a horse or a cow for one" (ante, p. 78); while according to Hardy's record, the nasal fetish is "a small, round, white bone, 5 inches in length, tapering off at both ends, and rigged something like a cross-jack yard."[1]

[237] [291]

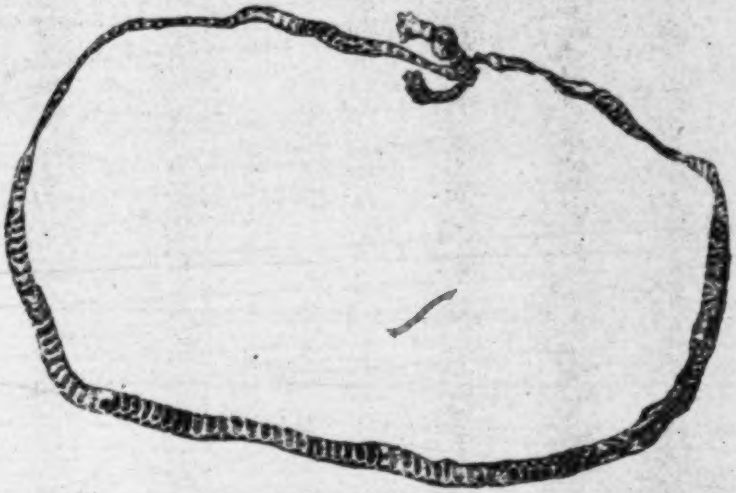

FIG. 7—Snake-skin belt.

The custom is apparently obsolete, and nothing is known directly of details or motives.

301 304 Excepting these mutilations the corporeal decoration of the Seri is apparently limited to the face-painting: among the 60 individuals at Costa Rica in 1894 there was no trace of tattooing or scarification of face, limbs, or body; there were no labrets or earrings, and neither lips nor ears were pierced, nor were nasal septa observed to be perforated in accordance with the reputed ancient custom; the teeth were neither filed nor drilled; no indications of amputation or other maiming (save the removal of the incisors) were observed—indeed, the instinct for physical markings of symbolic or decorative character, which seems to be normal to primitive men, was apparently satisfied by the prevalent and persistent face-painting among the females.

291 The extra-corporeal decorative devices are of a meagerness and pov-

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[1] Travels, p. 286.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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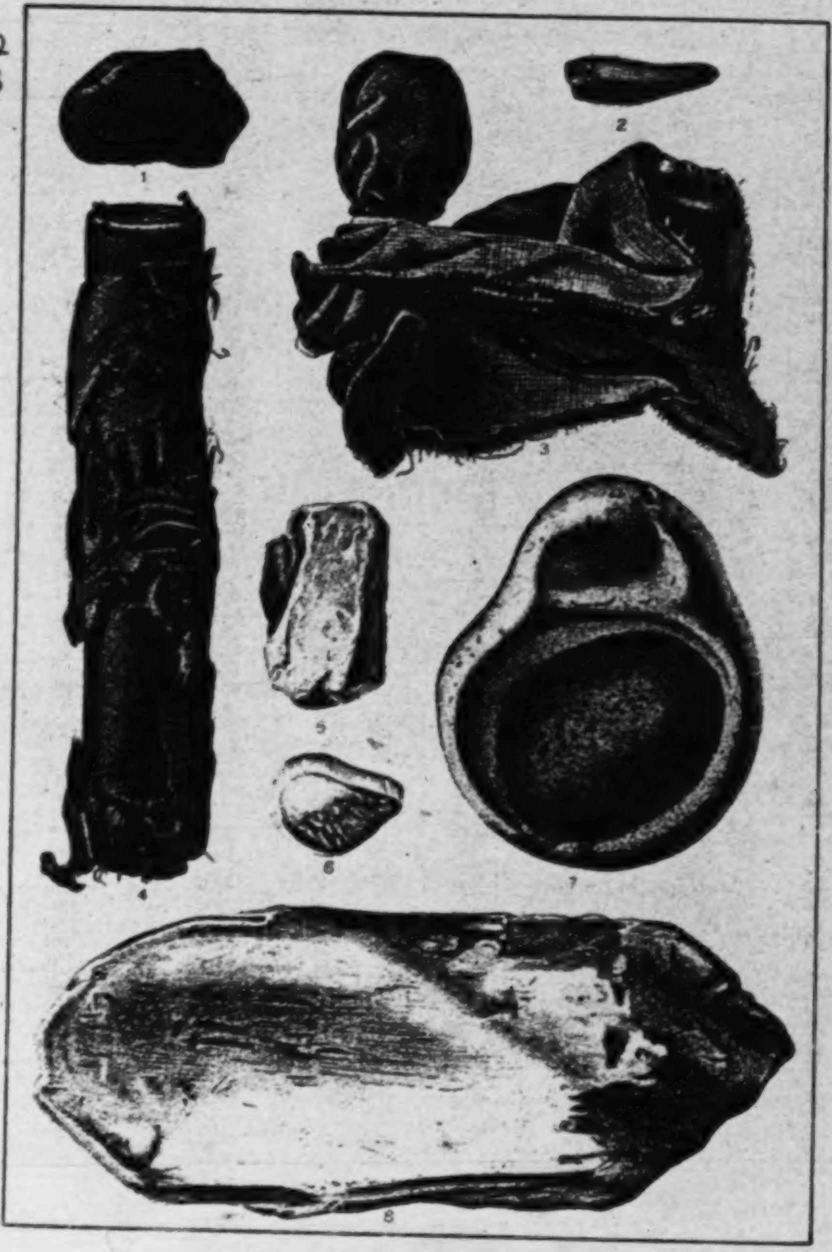

SERI FACE PAINTING PARAPHERNALIA

[p. 170 A]

291 erty even transcending the poor apparel, flimsy habitations, and generally ill-developed artifacts of the lowly tribe.

[237] The most prominent personal possession is the pelican-skin robe; it is usually made of six skins, slightly dressed and in full plumage, sewed together with sinew in a conventional pattern of such sort as to give the greatest possible expanse consistent with the irregular outlines of the individual skins, and at the same time to display a conventional color pattern on the feathered side, the colors ranging from the dorsal slate to the ventral white of the fowl (as indicated in plate XXIII); sometimes there are only four skins and rarely there are eight, but the conventional arrangement is maintained. Before the beginning of a fairly regular barter at Rancho de Costa Rica, and hence before the introduction of manta and other stuffs, the pelican-skin robes were supplemented by kilts made of mesquite root or other fibers, spun and twisted in the fingers and woven probably on some primitive device no longer in use; but so far as is known these native fabrics were devoid of decorative patterns in color or weave. Less habitually a short wammus or shirt, with long sleeves, made of a material similar to that of the kilt, was worn; but it, too, was without ornamentation, so far as can be ascertained. The remaining article of utilitarian apparel is the belt, usually consisting of a strip of skin (of deer, rabbit, peccary, etc), slightly dressed with the hair on; frequently this is replaced by a cord or braided band of human hair, while the favorite belt of some of the

[301]
[824]

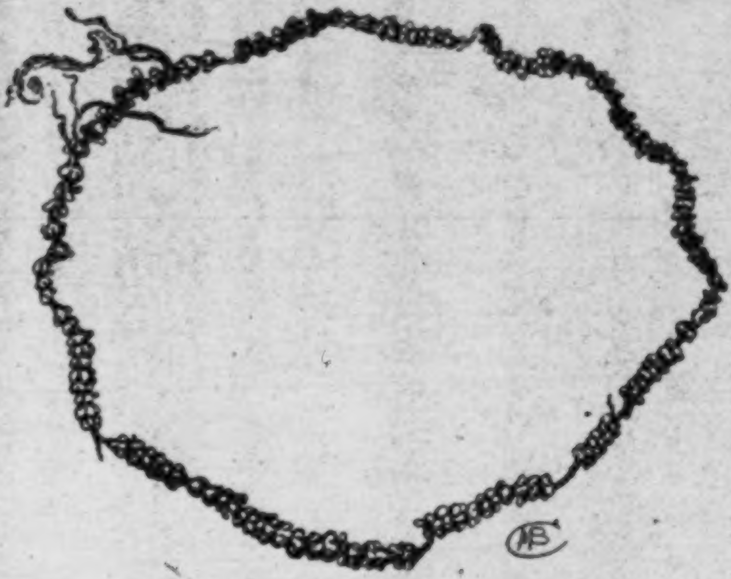

FIG. 8—Dried flower necklace.

[177]

[286]

29| young warriors is a snake skin (such as that illustrated in figure 7); but so far as was seen the belts are not extended into tassels, decorative appendages, or even flowing ends.

The presumptively decorative costumery observed is limited to 30| necklaces, usually of strung seeds, shells, and beads of wood or bone (figures 8, 9, 10, 11, 12, and 13), though animal appendages, such as hoofs, teeth, etc, are sometimes worn. The most highly prized necklace found at Costa Rica was a human-hair cord with nine crotalus rattles attached (figure 14), worn by a young warrior of the Rattlesnake (?) clan. Not the slightest indication of head-dresses was seen (though deer and lion masks are said by Hardy to have been worn on occasions); there were no bracelets, leg-bands, or rings of any description, and the cheap jewelry given to many of the women and youths at Costa Rica was either strung about the neck or concealed; while it is significant that even the showiest jewelry was less appreciated than bits of manta or lumps of [177] sugar. When it is remembered that the Seri have been in occasional contact with Caucasians for over three and a half centuries, the fact that not a single glass bead was found among them becomes significant; and the significance of the simple fact is increased by the virtual absence of that persistent desire and protean use for beads—or bead-sense—so prominent among most primitive tribes.

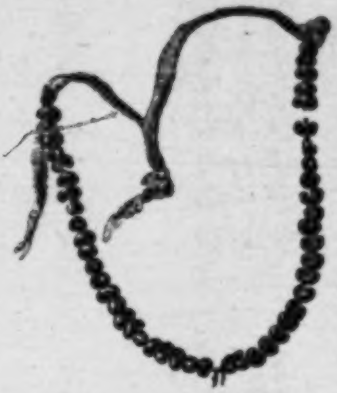

Fig. 8—Seed necklace.

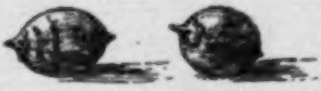

Fig 10—Nut pendants.

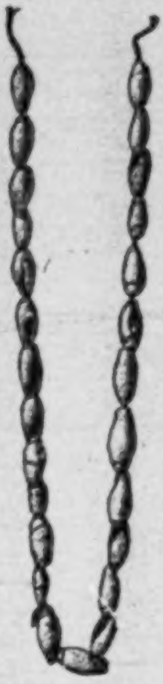

Fig. 11—Shell beads.

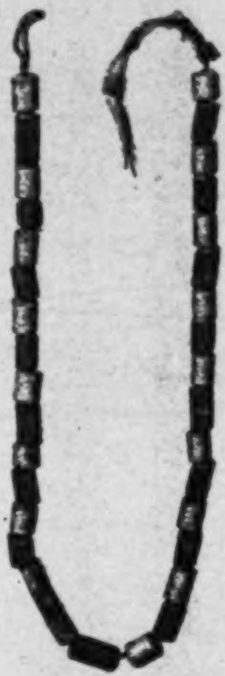

Fig. 12—Wooden beads.

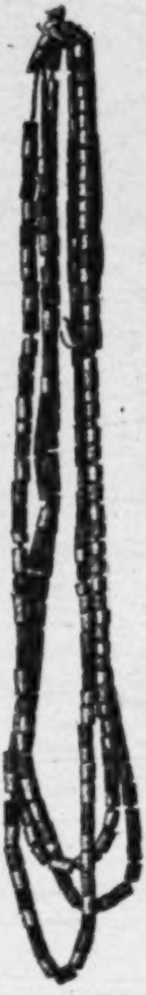

FIG. 13—Necklace of wooden beads.

Naturally the conditions at Costa Rica were unfavorable to the study 177
of native ideas concerning apparel. The women and some of the children were arrayed chiefly in cast-off habiliments of 291
the rancheras or in nondescript rags, while the men 301
either aped Mexican fashions, like Mashém, or shamefacedly sweltered under the unaccustomed burden of tatterdemalion gear; yet there was a meaningful absence of that desire for finery so prominent among primitive peoples—a fact quite as eloquent in itself as the absence of bracelets and bangles, tassels and trappings. It is probable that the shamans and mystery-hedged crones in the depths of Seriland [756]
enhance their influence by the aid of symbolic paraphernalia (indeed, some inkling of such customs is found in the meager records of earlier visitors);[1] yet the conspicuous feature of Seri costumery is the dearth of decorative devices.

The habitations of the tribe are the simplest of 342
jacales—mere bowers, affording partial protection 531
from sun and wind, but not designed to shed rain or bar cold. Half a dozen of these were examined at Costa Rica in 1894 and probably a hundred more, in various stages of habitability, in Seriland proper in 1895, yet not the slightest trace of decoration was observed—the structures are plainly and barrenly utilitarian in every feature. The same may be said 501
of the balsas in which the Seri navigate their stormy 531
waters; for the peculiarly graceful curves of the craft evidently stand for nothing more than the mechanical solution of a complex problem in balanced forces, wrought out through the experience of generations, while the simple reed bundles are absolutely devoid of paint, of superfluous cord, of fetishistic appendages or markings, of tritons, nereids, or other votive symbols at bow or stern, and of industrially superfluous features or attachments in general—indeed, the only appendages discovered were one or two simple wooden marlinspikes (shown in figure 26), thrust among the reeds to be at hand in case of need for repairs.

Among the utensils employed in the primitive 415
householdry of the Seri the most conspicuous and at the same time the most essential is the olla, or water-jar. Its technical features are described elsewhere; but it may here be noted that the olla is the central artifact about which the very

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[1] Hardy noted the use of "a small leathern bag, painted and otherwise ornamented", as a medicine rattle (Travels, p. 282), and also described a wind-symbol and an effigy used for thaumaturgic purposes (ibid., pp. 294, 295).

415 life of the tribe rotates: since the clans never reside and rarely camp nearer than 3 to 15 miles from the aguaje, a large part of the water consumed must be transported great distances in these vessels; since the region is one of extreme aridity, the lives of small parties often depend on the integrity of the olla and on the care with which the fragile vessel is protected from shock or overturning; and hence the utensil must occupy a large if not a dominant place in everyday thought—indeed, the fact that it does so is attested by constant [764] custom and also by its employment as the most conspicuous among

[301]
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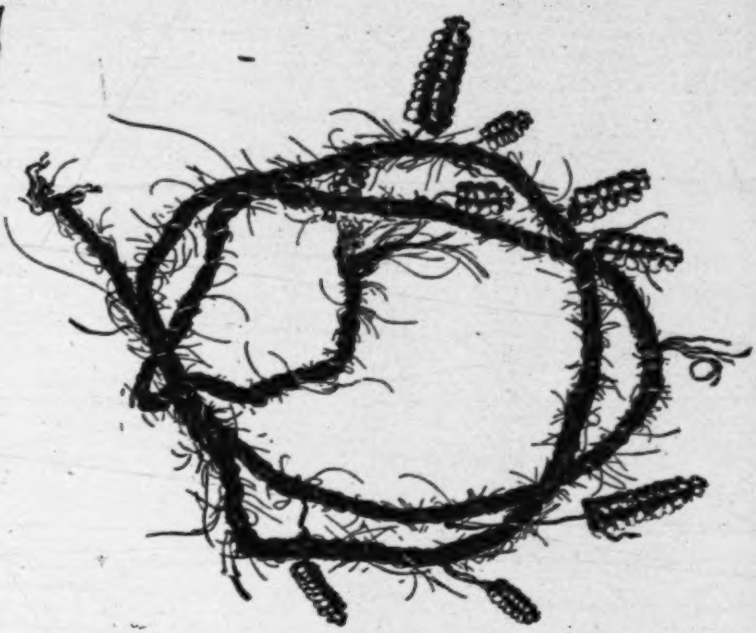

FIG. 14—Rattlesnake necklace.

the mortuary sacrifices. Thus, the relation of the Seri olla to its makers and users is parallel with that of the ever-present earthen pot to the Pueblo people, or that of the cooking basket to the acorn-eaters of California, save that its relative importance is enhanced by the fewness of activital lines and motives in Seri life. Moreover, this most characteristic utensil is established and hallowed in Seri 172 thought by immemorial associations: its sherds are sown over the 415 hundred thousand square miles of ancient "despoblado" from Tiburon to Caborca, Magdalena, Rio Opodepe, and Cerro Prieto, and are scattered through the 90 feet of shells forming Punta Antigualla (perhaps the oldest shell mound of America); and all the sherds from the range

and the shell-strata are so like and so different from any other fictile 415
ware as to be distinguished at a glance. Hence it would seem manifest [172]
that the Seri olla must constitute a normal nucleus for the Seri esthetic;
yet even here the field is practically barren, as is shown by the study of 415
a score of usable and mortuary specimens and of thousands of sherds. 531
The most ornate specimen seen is that depicted in plate XXXII. Its
form, like that of the balsa, is a mechanical equation of forces and
materials; its body-color is that of the clay, blotched and blackened [323]
irregularly by the smoke of the firing; and its decoration is limited to
17 faint lines or bands radiating downward from the ill-shaped neck.
The radial bands were evidently drawn by a finger dipped in clayey
water after the vessel was otherwise finished for the firing; they are
irregular in placement, width, length, and direction; they generally
run in pairs, two straight lines alternating with two zigzag lines, though
the circuit is completed by two zigzags drawn wide apart and separated
by a single straight line. The meaning of the device (if meaning there
be) was not directly ascertained; but it is suggestive that its maker and
owner was the mother of the youthful warrior from whom the rattlesnake
necklace was obtained (her face-symbol is that shown in the
lower left figure of plate XXVI), and that the vessel was surrendered
more reluctantly than any other article obtained from the tribe.

Another utensil of some importance to the tribe is a basket of the 415
type illustrated in figure 24. It is manufactured with much skill
and is used for various domestic purposes, being practically water-tight [285]
and unbreakable, and materially lighter than even the unparalleledly
light fictile ware of the Seri. In form and size and weave the half dozen
examples seen correspond with widespread southwestern types; yet it [171]
is noteworthy that while otherwise similar baskets are habitually decor-
ated by other basket-making tribes, the Seri specimens were absolutely [531]
devoid of decorative devices.

Practically the only remaining artifacts available for decoration are 411
those connected with archery; and it suffices to say that while the bows
are skilfully made and the arrows constructed with exceeding pains, 531
not a single specimen seen showed the slightest trace of symbolism or
of nonutilitarian motive.

Summarily, the Seri are characterized by extreme esthetic poverty. 517
This has been noted by the early missionaries and by the few other travelers who have approached their haunts, as well as by the vaqueros on the Encinas and Serna and other ranchos bordering their range, who know them as "los pobrecitos". All observers have been struck with their destitution and squalor; yet when the impressions are particularized they are seen to denote absence of the poor luxuries, rather than the bare necessities, of primitive life. The people are pathetically poor in the industrial sense; their equipment in artifacts—implements, weapons, utensils, habitations, apparel—is meager almost, if not quite, beyond parallel in America; yet their esthetic equipment, practically

517 limited as it is to a single line of symbolic portrayal, is still more abjectly meager.

[171] Any comparison of the Seri esthetic with that of other Amerind tribes serves only to emphasize its paucity: the tribes of the plains, with their eagle-feather headdresses, elaborately arranged scalp-locks, widely varied face-painting, and ritualistic camp circles; the Pueblo peoples, with their ornate masks, elaborate altars, figured stuffs, and painted pottery; the denizens of the eastern woods, with their feather-decked peace-pipes, divinatory games, fringe-bordered garments, and prayer-inscribed arrows; the coastwise peoples of the upper Pacific, with their labrets and tattoo-marks, totem-poles and carved house-fronts, painted canoes and prodigal potlatches; the neighboring desert tribes, with their festal footraces, decorated pottery and basketry, pendent scarfs and garters, and well-wrought caskets for family fetishes; even the timid acorn-eaters of California, with their sacramental baskets, artistically befringed kilts, bead-strings of far-traveled nacre, and patiently wrought fabrics of rare feathers—all of these seem rich in esthetic motives when contrasted with "los pobrecitos" of arid Seriland. [105] And the contrast is only intensified when the economic motives of the various tribes are compared: the industrial motives of the Seri are fairly numerous and diverse; they are skilful huntsmen, successful fishermen, capable navigators, and competent warriors (as attested by the protection of their principality for centuries), so that despite the absence of agriculture and the avoidance of commerce, their industrial range is not very far below the aboriginal average; and while they are deficient in thrift, this shortcoming is balanced by a peculiarly developed vital economy whereby they are delicately adjusted to their environment, as has been already shown. On the whole, it would appear that the Seri are not only lower in esthetic development than the contemporary tribes thus far studied, but also that they stand at the bottom of the scale in the ratio of esthetic to industrial motives.

THE SIGNIFICANCE OF DECORATION

000 Largely through recent researches among the American aborigines, it has been shown that decorative and many if not all other esthetic concepts normally arise in symbolism, gradually expand in conventionalism, and eventually mature in a realism which is itself the source of ever-extending esthetic motives; and the observations on the lowly Seri afford opportunity for somewhat extending the generalizations based on higher tribes.

When peoples of unequal cultural development are compared, it is commonly found that the higher are the more independent in action and thought: thus, advanced peoples make conquest of nature for their own behoof, while primitive peoples are largely creatures of environment; Caucasian citizens are self-conscious lawmakers, while Amerind tribesmen are semiconsciously dominated by mysteries fearsomely

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interpreted by their shamans; and, in general, enlightened men think and speak freely, come and go as they like, and discard the badges of conventionism, while savages are constrained by customs carrying the power of law, controlled by precedent, and clothed in hierarchic regalia. So, too, when a particular series of tribes are compared, it is found that those of higher culture (or wider knowledge) are the more independent, the more given to essays in social and industrial and other lines of activity, and hence the more varied in esthetic and economic motives: thus, the several Iroquoian tribes integrated the knowledge proper to each, and thus made themselves an intellectual and physical power able to eliminate or assimilate the isolated tribes on their borders; the sages of the Siouan stock induced the warriors of their leading tribes to combine in a circle of seven council fires, which grew into the great Dakota confederacy and soon gained strength to dominate the entire northern plains; but while these and other federations were pushing forward on the way leading to feudalism and thence to national organization, the self-centered California tribes consecrated their tongues to their own kindred, thereby stifling culture at its source and virtually leashing themselves unto the acorn-bearing oaks of their respective glades. Still more striking are the differences in independence revealed by a comparison of human and subhuman organisms; for the humans are immeasurably freer and more spontaneous in thought and action than even the highest beasts: thus, the Seri blood-bearer applies, renews, and elaborates her face-mark at will, while the antelope and the raccoon unconsciously develop their standard-marks through the tedious operation of vital processes regulated under the cruel law of survival; men make their beds according to the dictates of judgment, while the half-artificialized dog lies down in accordance with a hereditary custom which has been needless for a hundred generations; and the very essence of human activity is volitional choice (or artificial selection), while the keynote of merely organic agency is the nonvolitional chance of natural selection. No less striking are the differences found on comparing other realms of nature, in which the higher are invariably characterized by the greater independence; the animal realm is distinguished from the vegetal realm mainly by the possession of volitional motility; while the vegetal is distinguished from the mineral realm chiefly by those better selective powers exemplified in vital growth. The several comparisons seem to define that course of volitional development arising in the chemical and mechanical affinities of the mineral realm, burgeoning in simple vitality, multiplying in the motility of animal life, greatly expanding in the collective activity of demotic organization, and culminating in the conquest of nature through the mind-guided powers of enlightened mankind. Expressed briefly, this course of development may be characterized as the progressive passage from *automacy* to *autonomy*.

The volitional development thus seriated may be divided, somewhat

000 arbitrarily yet none the less safely, into its esthetic and economic factors; and, for convenience, the latter may be considered to comprise the industrial, institutional, linguistic, and sophic constituents—i. e., the esthetic activities may be juxtaposed against the several other activities of domestic life. When this division is made, it at once becomes manifest that the esthetic activities are the freest and most spontaneous of the series, and hence lead the way to that autonomy which marks the highest development. This significant relation has been glimpsed by various artists and poets, scholars and naturalists; it was at least partly caught by Goethe when he taught that knowledge begins in wonder; it was loosely seized by Schiller, and later by Spencer, in the surplus-energy theory of play; it was grasped by Groos in his prophecy theory of play,[1] and still more firmly (although less conspicuously) by Seton-Thompson in his analysis of animal conduct and motives. The relation has for some years been recognized as one of the principles underlying the American ethnologic researches; yet it is not so well understood as to obviate the need for further consideration. Accordingly it may be pointed out that while the human activities and the agencies of lower nature rest alike on a mechanical foundation, the mechanical element diminishes in relative magnitude in passing from the lower to the higher realms of nature: in the mineral realm the agencies may be deemed mechanical in character and individual in effect; in the vegetal realm vitality is superadded, and the effects are carried forward through heredity; in the animal realm motility is added in turn, and instinct arises to shape the individual and hereditary and motile attributes; the social realm may be considered to be marked by the accession of conjustment, with its multifarious and beneficent effects on individuals, generations, movements, and groups; while the rational realm may be defined as that arising with the accession of reason as a guide to action, and with the development of nature-conquest as its most characteristic effect—though it is to be noted that the several transitions are progressive rather than saltatory. Thus each realm is characterized by the attributes of each and all of those lower in the scale, plus its own distinctive attribute. It may also be pointed out that each new attribute defining a higher realm is freer and more spontaneous than those of lower realms; for vitality is freer than mere affinity, self-movement than mere growth, and cooperation than mere movement, while reason-led action is freest of all. Accordingly each realm (as already implied) is characterized by a larger autonomy than any of those lower in the scale; i. e., by all the factors of autonomy in the lower realms, plus its own distinctive factor.

It may be pointed out further that, in the higher realms at least, the action normal to each realm tends to generate that characteristic of the next higher realm: the self-movement of the animal realm is, under favorable conditions, constrained through vital economy to fall into the conjustment of the social realm; and the organization of the social realm, involving as it does a hierarchic arrangement of organisms according to mentality,[1] habituates the higher individuals of the organizations to that control of lower individuals which buds in agriculture, blossoms in civil rule, and fruits in nature-conquest. Thus the factors of each realm are prophetic of the distinctive factor of the next higher—and the prophecy is not merely passive, but is, rather, an actual step in causal sequence. 000

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[1] Cf. American Anthropologist, new series, vol. 1, 1899, p. 274.

It may be pointed out still further that, in the higher realms at least, spontaneous action necessarily precedes maturely developed function: in the vegetal realm the tree shoots upward before its form is shaped and its tissue textured by wind and sun and environing organisms; in the animal realm youthful play presages the prosaic performances normal to adult life; in the social realm men behave before framing laws of behavior; and in the rational realm fortuitous discovery paves the road for sure-footed invention. Thus natural initiative arises in spontaneous action, while mechanical action is mainly consequential.

It may be pointed out finally that the field of spontaneous action is relatively increased with the endless multiplications of action accompanying the passage from the lower realms to the higher—indeed the relations may be likened unto those of exogenous growth, which is largely withdrawn from the irresponsive and stable interior structures and gathered into the responsive and spontaneously active peripheral structures; so that spontaneous activity attending natural development is relatively more important in the higher stages than in the lower.[2]

Now, on combining the several indications it is found clear (1) that the more spontaneous developmental factor in all normal growth corresponds with the esthetic factor in demotic activity; (2) that this is the initiatory factor and the chief determinant of the rate and course of development; (3) that it is of relatively enlarged prominence in the higher stages; and hence (4) that the esthetic activities afford a means of measuring developmental status or the relative positions in terms of development of races and tribes.

On applying these principles to the Seri tribe, in the light of their meager industrial motives and still poorer esthetic motives, it would appear that they stand well at the bottom of the scale in demotic development. Their somatic characteristics are suggestively primitive, as already shown; and the testimony of these characteristics is fully corroborated by that of their esthetic status as interpreted in the light of the laws of growth.

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[1] The spontaneous arrangement of organisms in accordance with mental grade is well illustrated by that solidarity of desert life which [illegible] the cultivation of plants and the investigation of animals (The Beginning of Agriculture, in The American Anthropologist, vol. VIII, October, 1895, pp. 350-375; The Beginning of Zooculture, ibid., vol. X, July 1897, pp. 215-230.)

[2] The laws of growth recognized herein have been somewhat more fully outlined elsewhere, notably in The Earth the Home of Man (Anthropological Society of Washington, Special Papers 2, 1894, pp. 1-8), and in Piratical Acculturation (American Anthropologist, vol. XI, 1898, pp. 243-249).

INDUSTRIES AND INDUSTRIAL PRODUCTS

105 The pacific vocations of the Seri are few. They are totally without agriculture, and even devoid of agricultural sense, though they consume certain fruits and seeds in season; they are without domestic animals, though they live in cotoleration with half-wild dogs, and perhaps with pelicans; and they are without commerce, save that primitive and inimical interchange commonly classed as pillage and robbery. Accordingly, their pacific industries are limited to those connected with (1) sustentation, chiefly by means of fishing and the chase; (2) navigation and carrying, (3) house-building, (4) appareling, and (5) manufacturing their simple implements and utensils; and these constructive industries are balanced and conditioned by the destructive avocation of (6) nearly continuous warfare.

FOOD AND FOOD-GETTING

312 The primary resource of Seriland is raised to the first place in realized importance only by its rarity, viz, potable water—a commodity so abundant in most regions as to divert conscious attention from its paramount role in physiologic function as well as in industrial economy. The overwhelming importance of this food-source is worthy of closer attention than it usually receives. Classed by function, 000 human foods are (1) nutrients, including animal and vegetal substances which are largely assimilated and absorbed into the system; (2) assimilants, including condiments, etc, which promote alimentation and apparently aid metabolism; (3) paratriptics, or waste preventers, including alcohol and other stimulants, which in some little-understood way retard the waste of tissue and consequent dissipation of vital energy; and (4) diluents, which modify the consistency of solid foods and thereby facilitate assimilation, besides maintaining the water of the system. Classed by chemic constitution, the foods may be divided into (1) proteids, or nitrogenous substances, including the more complex animal and vegetal compounds; (2) fats, or nonnitrogenous substances in which the ratio of hydrogen and oxygen is unlike that of water, and which are second in complexity among animal and vegetal compounds; (3) carbohydrates, or nonnitrogenous compounds of carbon with hydrogen and oxygen in the proportions required to form water, which are among the simpler vegetal and animal compounds; and (4) minerals, chiefly water, with relatively minute quantities of various salts. Both classifications are somewhat indefinite, largely because most articles of food combine two or more of the classes; yet they are useful in that they indicate the high place of the simple mineral water among food substances. Quantitatively this constituent stands far in the lead among foods; the human adult consumes a daily mean of about 4½ pounds of simple liquids and 2½ pounds of nominally solid, but actually more than half watery, food; so that the

average man daily ingests nearly 6 pounds of water and but little over 1 000
pound of actually solid nutrients. Thus the ratio of the consumption of liquid food to that of solids is (naturally, in view of that readier elimination of the liquid constituent so characteristic especially of arid regions) somewhat larger than the ratio of water to solids in the human system, the ratios being nearly 6:1 and 4:1, respectively.[1] This analysis serves measurably to explain the peculiarly developed water-sense of all desert peoples, a sense finding expression in the first tenets of faith among the Pueblos, in the fundamental law of the Papago, and in the strongest instinct of the Seri; for among folk habituated to thirst through terrible (albeit occasional) experience, water is the central nucleus of thought about which all other ideas revolve in appropriate orbits—it is an ultimate standard of things incomparably more stable and exalted than the gold of civilized commerce, the constantly remembered basis of life itself.

The potable water of Seriland is scanty in the extreme. The aggre- 312
gate daily quantity available during ten months of the average year (excluding the eight wettest weeks of the two moist seasons) can hardly exceed 0.1 or 0.2 of a second-foot, or 60,000 to 125,000 gallons per day, of living water, i. e., less than the mean supply for each thousand residents of a modern city, or about that consumed in a single hotel or apartment house. Probably two-thirds of this meager supply is confined to a single rivulet (Arroyo Carrizal) in the interior of Tiburon, far from the food-yielding coasts, while the remainder is distributed over the 1,500 square miles of Seriland in a few widely separated aguajes, of which only two or three can be considered permanent; and this normal supply is supplemented by the brackish seepage in storm-cut runnels, as at Barranca Salina, or in shallow wells, as at Pozo Escalante and Pozo Hardy, which is fairly fresh and abundant for a few weeks after each moist season, but bitterly briny if not entirely gone before the beginning of the next. The scanty aggregate serves not only for the human but for the bestial residents of the Seri principality; and its distribution is such that the mean distance to the nearest aguaje throughout the entire region is 8 or 10 miles, while the extreme distances are thrice greater.

The paucity of potable water and the remoteness of its sources natu- 312
rally affect the habits of the folk; and the effect is intensified by a curi- 361
ous custom, not fully understood, though doubtless connected with militant instincts fixed (like the habits of primitive men generally) by abounding faith and persistent ritualistic practice—i. e., the avoidance of living waters in selecting sites for habitations or even temporary camps. Thus the principal rancherias on Tiburon island, about Rada Ballena, are some 4 miles from Tinaja Anita, the nearest aguaje; the

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[1] The place of water among food substances is more fully discussed in The Potable Waters of Eastern United States, 14th Ann. Rep. of the U. S. Geol. Survey, 1894, pp. 5-8; the physiologic consequences of deprivation of water are outlined in The Thirst of the Desert, Atlantic Monthly, April 1896, pp. 483-488.

312 extensive rancherias near Punta Narragansett measure 10 miles by
361 trail from the same aguaje; the half dozen jacales about Campo Navidad
are separated by some 15 miles of stony and hilly pathway from the
alternative watering places of Tinaja Anita and Arroyo Carrizal;[1] and
the huts crowning the great shell-heap of Punta Antigualla—one of
the most striking records of immemorial occupancy in America—are
nearly or quite 10 miles by trail from Pozo Escalante, and still further
from Aguaje Parilla, the nearest sources of potable water. These are
but typical instances; and while there are ruined huts (evidently
regarded as temporales) near the dead waters of Barranca Salina and
Pozo Escalante, they tell the tribal policy of locating habitations in
places surprisingly remote from running water. Like other desert
147 folk, the Seri have learned to economize in water-carrying by swigging
incredible quantities on their occasional visits to the aguajes; it is prob-
312 able, too, that their systems are inured, somewhat as are those of
[271] the desert animals that survive deprivation of water for days or months,
to prolonged abstinence from liquid food; yet it seems safe to assume
that at least half of the water required in their vital economy (say 2 or
3 pounds apiece daily, on an average) is consumed after transportation
over distances ordinarily ranging from 4 to 12 miles. Under these
conditions the Seri have naturally produced a highly developed water
industry; they are essentially and primarily water-carriers, and all
their other industries are subordinated to this function.

415 Concordantly with their customs, the Seri have a highly differentiated
aquarian device in the form of a distinctive type of olla, which is
remarkable for the thinness and fragility of the ware, i. e., for largeness
of capacity in proportion to weight. Representative specimens are
illustrated in plates XXXII and XXXIII (the former painted, as already
described). The dimensions of the two vessels are as follows: painted
olla, height 34 cm. (13⅜ inches), mean diameter 32.5 cm. (12¾ inches);
plain olla, height 32 cm. (12⅝ inches), mean diameter 32 cm. In both
specimens the walls are slightly thickened at the brim, those of the
painted vessel measuring about 4 mm. and those of the plain vessel
about 4.5 to 5 mm. in thickness. Below the brim the walls are thinned to
about 3 mm., as is shown in the fractured neck of the painted specimen.
The capacity of these Seri vessels in proportion to their weight, compared with that of typical examples of ware produced by other desert
peoples, is shown in the accompanying table.

171 Comparison of the mean ratios indicates that the Seri ware is almost
exactly twice as economical as that of the Pueblos—i. e., that its capacity
415 is twice as great in proportion to the weight of the vessel; and that

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[122] [1] The preciousness of water in this hard province was impressed in the 1895 expedition, during which the cost of the commodity, reckoned on the basis of the time and labor involved in obtaining it, was estimated at $10 or $12 per gallon, or about the wholesale price of the finest champagne.

even the ware of the wide-wandering Papago is more extravagant than 171
that of the Seri in the ratio of 100 to 54. It is noteworthy, too, that
the typical Seri ware is much more uniform than that of the other 415
tribes; the various specimens seen in use at Costa Rica, and nearly entire in various parts of Seriland, were closely similar in form and nearly alike in dimensions; while the innumerable smaller fragments scattered over Seriland and the neighboring "despoblado" or buried amid the shells of Punta Antigualla correspond precisely in thickness, in curvature, in material, and in finish with the ware observed in use.

Neither the manufacture of the ware nor the sources of material have 323
been observed by Caucasians. Examination of the specimens indicates that the material is a fine and somewhat micaceous clay, apparently an adobe derived from granitoid rocks; and such material might be obtained in various parts of Seriland. The structure of the ware reveals no trace of coiling or other building process, nor does the texture clearly attest the beating process employed by the Papago potters; but there is a well-defined lamellar structure, and the surfaces (especially inner) are striated circumferentially or spirally in such manner as to suggest a process of rubbing under considerable pressure. All the specimens are so asymmetric as to indicate the absence of mechanical devices approaching the potter's wheel, while the necks are of such size as to admit the hand and forearm of an adult female but not of a warrior. Some suggestion of the manufacturing process is afforded by miniature fetishistic and mortuary specimens, such as those depicted in figures 17 and 18, and the larger specimens shown in figure 30, which were evidently shaped from lumps of suitable clay first hollowed and then gradually expanded by manipulation with the fingers, with little if any aid from implements of any sort. On putting the various indi-

Ratio of capacity to weight among Indian ollas[1]

	Capacity	Weight	Ratio	Mean ratio
Seri:	*Liters*	*Kilograms*		
Plain	15.14	1.91	0.126	0.137
Painted	15.61	2.30	.147	
Papago:				
No. 1	17.45	4.00	.229	.253
No. 2	8.51	2.38	.279	
Sia	15.14	3.82	.253	.271
Zuñi	12.30	3.18	.258	
Acoma	15.61	4.31	.276	
Hopi	13.72	4.06	.295	

[171]
[415]

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[1] In this table the ratio is expressed by the weight in kilograms for each liter in capacity. The Papago and Pueblo specimens were selected from typical material in the National Museum and at random, save that in the Pueblo ollas choice was made of specimens corresponding approximately in size with those of the Seri.

323 [462] On putting the indications together it would seem probable that the ware is made by the women, and that each piece is shaped from a lump of tempered and well-kneaded clay of suitable size, first hollowed and rudely shaped over one hand, and gradually expanded by spiral rubbing, kneading, and pressure between the hands of the maker. The burning is incomplete and variable, suggesting a little outdoor fire in a shallow pit adapted to a single vessel. The ware is without glaze or slip or other surficial treatment save that the lamellar texture is best developed toward the surfaces; hence it is so porous that the filled vessel is moist even in the sun.

482 [462] Ordinarily women are the water-bearers, each carrying an olla balanced on the head with the aid of a slightly elastic annular cushion, usually fashioned of yucca fiber (plate XXXII and figure 15), though in some cases two ollas are slung in nets at the ends of a yoke (figure 16) after the Chinese coolie fashion (this device being apparently accultural).

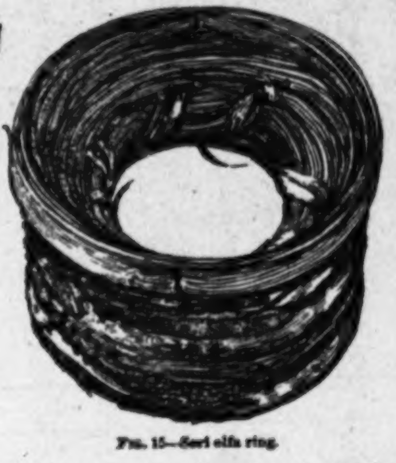

FIG. 15—Seri olla ring.

415 The function of the conventional Seri olla is exclusively that of a canteen or water-carrying vessel, and its form is suited to no other use; while its lines, like its thinness of wall, are adapted to the stresses of internal and external pressure in such wise as to give maximum strength with minimum weight. It is by reason of this remarkably delicate adaptation of materials to purposes that the plain olla figured in plate XXXIII, weighing an ounce or two more than 10 pounds in dry air, holds and safely carries three and one-third times its weight of water. When such ollas are broken, the larger pieces may be used as cups or

FIG. 16—Water-bearer's yoke.

dishes, or even as kettles, in the rare culinary operations of the tribe (as 415 shown in plate X); but the entire vessels appear to be religiously devoted to their primary purpose.

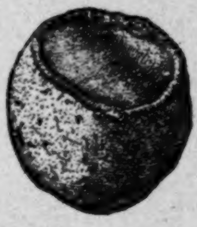
FIG. 17—Symbolic mortuary olla.

While some three-fourths of the observed fictile ware of the Seri and a still larger proportion of the scattered sherds represent conventional ollas, there are a few erratic forms. The most conspicuous of these is a smaller, thicker-walled, and larger-necked type, of which three or four examples were observed; two of these were in use (one is represented lying at the left of the jacal in plate X), and another was found cracked and abandoned on the desert east of Playa Noriega. The vessels of this type are used primarily as kettles and only incidentally as canteens. In both form and function they suggest accultural origin; but the ware is much like that of the conventional type. Another erratic type takes the form of a deep dish or shallow bowl, of rather thick walls and clumsy form, which may be accultural; a single example was observed in use (it is shown in plate XIV). There are also mortuary forms, including a miniature olla (figure 39) and bowl (figure 41), and such still smaller examples as those illustrated in figures 17 and 18. In addition to the utensils a few fictile figurines were found. Most of 323 these were crude or distorted animal effigies, and one (broken) was a 532 rudely shaped and strongly caricatured female figure some 2 inches high, with exaggerated breasts and pudenda. Analogy with neighboring tribes suggests that the very small [171] vessels and the figurines are fetishistic appurtenances to the manufacture of the pottery; e. g., that the fetish is [415] molded at the same time and from the same material as the olla, and is then burned with it, theoretically as an invocation against cracking or other injury, but practically as a "draw-piece" for testing the progress of the firing.

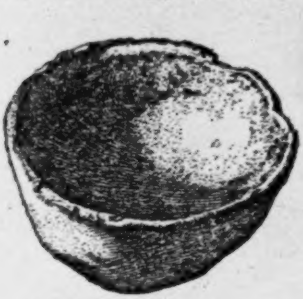
FIG. 18—Symbolic mortuary dish.

By far the most numerous of the 237 utensils connected with potable water are drinking-cups and small bowls or 415 dishes; but these are merely molluscan shells of convenient size, picked up alongshore, used once or oftener, and either discarded or carried habitually without other treatment than the natural wear of use (an example is illustrated in figure 19). Larger bowls or trays are improvised from entire carapaces of the tortoise (probably *Gopherus agassizii*), which are carried considerable distances; and still larger emergency water-vessels consist of carapaces of the green turtle (*Chelonia agas-*

sizii), laid inverted in the jacales; these shells also being used in natural
237 condition. No wrought shells, molluscan or chelonian, were observed
415 in use or found either in the jacales or on the hundreds of abandoned sites; but the vicinage of the rancherias, the abandoned camps and house sites, and the more frequented paths are bestrewn with slightly worn shells, evidently used for a time and then lost or discarded. The relative abundance of the fictile ware and this natural shell ware in actual use is about 1 : 3; i. e., each adult female usually possesses a single olla of the conventional type, and there may be one or two extra ollas and two or three clay dishes in each band or clan, while each matron or marriageable maid is usually supplied with two to four shell-cups and each little girl with one or two; and there are twice as many carapace trays as clay dishes. The disproportion of pottery and shell about the abandoned sites is naturally much greater; for the former is the most highly prized industrial possession of the women, while the shells are easily gained and lightly lost.

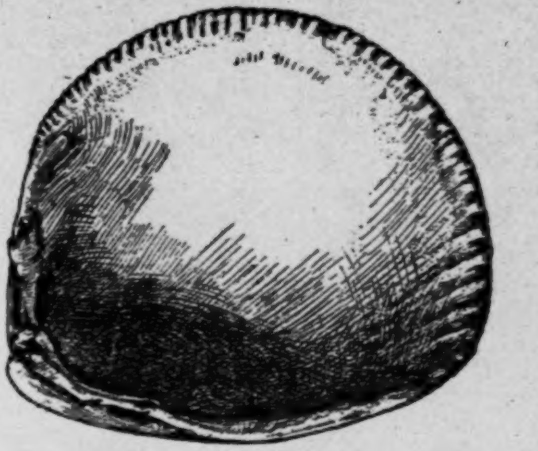

FIG. 19—Shell-cup.

262 With respect to solid food the Seri may be deemed omniverous though their adjustment to habitat is such that they are practically carniverous.

The most conspicuous single article in the dietary of the tribe is the
225 local green turtle. This chelonian is remarkably abundant throughout Gulf of California; but its optimum habitat and breeding-place would appear to be El Infiernillo, whose sandy beaches are probably better adapted to egg laying and hatching than any other part of the coast. Here it has been followed by the Seri; perhaps half of the aggregate life of the tribe is spent within easy reach of its feeding and breeding grounds, and tribesman and turtle have entered into an inimical com-

munalty something like that of Siouan Indian and buffalo in olden time, 225 whereby both may benefit and whereby the more intelligent communal [262] certainly profits greatly. The flesh of the turtle yields food; some of [237] its bones yield implements; its carapace yields a house covering, a convenient substitute for umbrella or dog-tent, a temporary buckler, and an emergency tray or cistern, as well as a comfortable cradle at the beginning of life and the conventional coffin at its end; while the only native foot-gear known is a sandal made from the integument of a turtle-flipper.

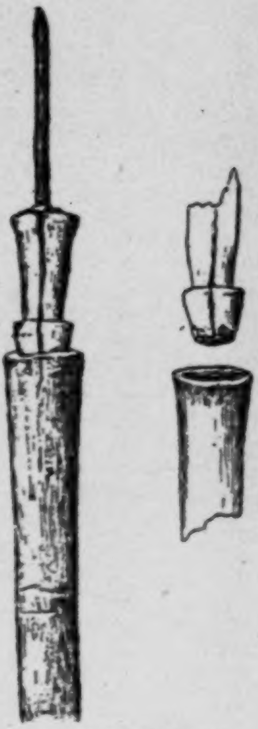

FIG. 20—Turtle-harpoon.

Doubtless the eggs and newly hatched [262] young of the turtle are eaten, and analogy with other peoples indicates that the females are sometimes captured at the laying grounds or on their way back to water; but observation is limited to the taking of the adult animal at sea by means of a specialized harpoon. A typical specimen 411 of this apparatus, as constructed since the introduction of flotsam iron, is illustrated in figure 20. It comprises a point 3 or 4 inches long, made from [illegible]ail or bit of stout wire, rudely sharpened by hammering the tip (cold) between cobbles, and dislodging the loosened scales and splinters by thrusts and twirlings in the ground; this is set firmly and cemented with mesquite gum [381] into a foreshaft of hard wood, usually 4 or 5 inches long, notched to receive a cord and rounded at the proximal end; the rounded end of this foreshaft fits into a socket of the main shaft, which may be either a cane-stalk (as shown in the figure) or a section of mesquite root; while a stout cord is firmly knotted about the foreshaft and either attached to the distal portion of the main shaft or carried along it to the hand of the user. The main shaft is usually 10 or 12 feet long, with the harpoon socket in the larger end, and is manipulated by a fisherman sitting or standing on his balsa. On catching 225 sight of a turtle lying in the water, he approaches stealthily, preferably from the rear yet in such wise as not to cast a frightening shadow, sets the foreshaft in place, guides the point close to the carapace, and then by a quick thrust drives the metal through the shell. The frictional resistance between the chitin and the metal holds the point in place, and although the foreshaft is jerked out at the first movement of the transfixed animal the cord prevents escape; and after partial tiring

225 the turtle is either drowned or driven ashore, or else lifted on the craft.[1] Immediately on landing the quarry, the plastron is broken loose by 264 blows of the hupf[2] and torn off by vigorous wrenches of the warriors and their strong-taloned spouses in the impetuous fury of a fierce blood-craze like that of carnivorous beasts; the blood and entrails and all soft parts are at once devoured, and the firmer flesh follows at a rate depending on the antecedent hunger, both men and women crushing integument and tendon and bone with the hupf, tearing other tissues with teeth and nails, mouthing shreds from the shells, and gorging the whole ravenously if well ahungered, but stopping to singe and smoke or even half roast the larger pieces if nearer satiety. [251] If the quarry is too large for immediate consumption and not too far from a rancheria the remnants (including head and flippers and shells) are hoisted to the top of the jacal immediately over the open end—the conventional Seri larder—to soften in the sun for hours or days; and on these tough and gamey tidbits the home-stayers, especially the youths, chew luxuriously whenever other occupations fail. In times of plenty, such sun-ripened fragments of reeking feasts are rather generally appropriated first to the children and afterward to the coyote-dogs; and it is a favorite pastime of the toddlers to gather about an inverted carapace on hands and knees, crowding their heads into its noisome depths, displacing the rare scavenger beetles and blowflies of this arid province, mumbling at the cartilaginous processes, and sucking and swallowing again and again the tendonous strings from the muscular attachments, until, overcome by fulness and rank effluvia, they fall asleep with their heads in the trough—to be stealthily nudged aside by the cringing curs attached to the rancheria. Com-

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[114] 501 411 [1] A lively and explicit account of Seri turtle-fishing appears in Hardy's Travels in the Interior of Mexico, 1829, pp. 296-297: "Bruja's bay is of considerable extent, and there are from five to three fathoms water close to Arnold's island, in the neighborhood of which the Indians catch abundance of turtle in a singular manner. I have already described their canoes, which in Spanish are called 'balsas'. An Indian paddles himself from the shore on one of these by means of a long, elastic pole of about 12 or 14 feet in length, the wood of which is the root of a thorn called mezquite, growing near the coast; and although the branches of this tree are extremely brittle, the underground roots are as pliable as whalebone and nearly as dark in color. At one end of this pole there is a hole an inch deep, into which is inserted another bit of wood, in shape like an arrow, having a square bit of iron 4 inches long fastened to it, the other end of the iron being pointed. Both the ball and cup are first moistened and then tightly inserted one within the other. Fastened to the iron is a cord of very considerable length, which is brought up along the pole, and both are held in the left hand of the Indian. So securely is the nail thus fixed in the pole that although the latter is used as a paddle it does not fall out.

225 "A turtle is a very lethargic animal, and may frequently be surprised in its watery slumbers. The balsa is placed nearly perpendicularly over one of these unsuspecting sleepers, when the fisherman, softly sliding the pole through the water in the direction of the animal till within a foot or two of it, he suddenly plunges the iron into its back. No sooner does the creature feel itself transfixed than it swims hastily forward and endeavors to liberate itself. The slightest motion of the turtle displaces the iron point from the long pole, which would otherwise be inevitably broken and the turtle would as certainly be lost; but in the manner here described it is held by the cord fastened on to the iron which has penetrated its back till, after it has sufficiently exhausted its strength, it is hoisted on board the canoe by the fisherman, who proceeds to the shore in order to dispose of his prize."

[412] [2] The universal stone implement of the Seri, improvised from a cobblestone and used in nearly every industrial occupation (see postea, p. 233); the designation is mimetic, or onomatopoetic, from the sound of the stroke, particularly on animal tissue.

Com-

monly the carapace and the longer bones from the flippers of the larger 237
specimens are preserved entire for other uses, and are cleaned only by 321
teeth and talons and tongues, aided by time but not by fire; but the 252
plastron, unless broken up and consumed immediately, is subjected to a cooking process in which it serves at once as skillet and cutlet—it is laid on the fire, flesh side up, and at intervals the shriveling tissues are clawed off and devoured, while at last the scorched or charred scutes themselves are carried away to be eaten at leisure.[1]

Perhaps the most significant fact connected with the Seri turtle-fishing is the excellent adaptation of means to ends. 225 The graceful and effective balsa is in large measure an appurtenance of the industry; the harpoon is hardly heavier and is much simpler than a trout-fishing tackle, yet serves for the certain capture of a 200-pound turtle; and the art of fishing for a quarry so shy and elusive that Caucasians may spend weeks on the shores without seeing a specimen is reduced to a perfection even transcending that of such artifacts as the light harpoon and fragile olla. Hardly less significant is the nonuse of that nearly universal implement, the knife, in every stage of the taking and consumption of the characteristic tribal prey; for it may fairly be inferred that the comparative inutility of the knife in dissevering the hard and horny chelonian derm, and the comparative effectiveness of the shell-breaking and bone-crushing hapf, have reacted cumulatively on the instincts of the tribe to retard the adoption of cutting devices. Of much significance, too, is the limited cooking process; for the habitual consumption of raw [252] flesh betokens a fireless ancestry at no remote stage, while the crude cooking of (and in) that portion of the shell not consecrated to other uses might well form the germ of broiling or boiling on the one hand and of culinary utensils on the other hand. On the whole, the Seri turtle industry indicates a delicate adjustment of both vital and activital processes to a distinctive environment, in which the abundant chelonian fauna ranks as a prime factor.

Analogy with other primitive peoples would indicate that the flesh of the turtle is probably tabu to the Turtle clan, that the consumption of the quarry is preceded by an oblation, and that there are seasonal or other ceremonial rites connected with turtle-fishing; but no information has been obtained on any of these points save a few vague and unwilling suggestions from Mashém tending to establish the analogy.

Flotsam and stolen metal have played a rôle in the industries of 174 177
Seriland so long that it is difficult to learn much of the turtle-fishing 411

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[1] These details were furnished largely by Mashem and Señor Encinas, but were verified in essentials [114] by personal observation of dietetic customs at Costa Rica in 1894; and they were corroborated by observations on both shores of El Infiernillo and Bahia Kunkaak in 1895. Especially significant were the remnants of a turtle feast on the southern beach of Punta Miguel interrupted by the approach of the exploring party. The indications were clear that the turtle had been landed and largely consumed before the fire was kindled, and that the cooking of the firmer portions had hardly been commenced before the camp was abandoned so hurriedly that not only the nearly eaten turtle and the glowing embers, but the harpoon (the specimen illustrated in figure 20), the still bloody and greasy hapf (that represented in plate XXV), and the fire-sticks were left behind. Gnawed fragments of charred plastrons are common relics about hastily abandoned camps generally.

174 during premetal times; but an intimation from Mashém that the old
177 men thought it much better to take the turtle with the teeth of an
"animal that goes in the water", and the similarity in terms for "har-
411 poon" (or arrow) and "teeth" both suggest that the aboriginal point may
have been a sea-lion tooth, and that the foreshaft itself may have been
a larger tooth of seal or cetacean. While the modern harpoon is shaped
with the aid of metal (hoop-iron, etc.), the forms are quite evidently
vestigial of knifeless manufacture, in which a naturally rounded or
abraded or fire-shaped foreshaft was fitted into the natural socket
afforded by a cane-stalk broken at its weakest point—i.e., just below the
joint; and both function and socket arrangement (as well as the lin-
guistic evidence) strongly suggest the cylindrical tooth as the germ of
the apparatus.

223 It is probable that water-fowl, considered collectively, stand second in importance as Seri prey; and the foremost fowl is undoubtedly the pelican, which serves not only as a fruitful food-supply but as the chief source of apparel.

The principal haunt and only known breeding ground of the pelican
in the Gulf of California is Isla Tassne, an integral part of Seriland; and
while the great birds are doubtless taken occasionally in Bahia Kun-
kaak, El Infiernillo, Bahia Tepoka, and other Seri waters, this island
is the principal pelican hunting ground. According to Mashém's
account, the chase of the pelican here is a well-organized collective
process: at certain seasons, or at least at times deemed propitious by
the shamans, pelican harvests are planned; and after some days of
preparation a large party assemble at a certain convenient point (pre-
sumably Punta Antigualla) and await a still evening in the dark of the
moon. When all conditions are favorable they set out for the island
at late twilight, in order that it may be reached after dark; on ap-
proaching the shore the balsas are left in charge of the women, while
the warriors and the larger boys, armed only with clubs, rush on the
roosting fowls and slaughter them in great numbers—the favorite
coup de grâce being a blow on the neck. The butchery is followed by a
gluttonous feast, in which the half-famished families gorge the tenderer
parts in the darkness, and noisily carouse in the carnage until overcome
by slumber. Next day the matrons select the carcasses of least injured
[237] plumage and carefully remove the skins, the requisite incisions being
made either with the edge of a shell-cup or with a sharp sliver of cane-
[281] stalk taken from an injured arrow or a broken balsa-cane. The feast
holds for several days, or until the last bones are picked and the whole
party sated, when the clans scatter at will, laden with skins and
lethargic from the fortnight's food with which each maw is crammed.

Mashém's recital gave no indication as to whether the Pelican clan participate in the hunting orgies, though it clearly implies that the chase and feast are at least measurably ceremonial in character; and this implication was strengthened by the interest and comparative vivacity awakened in the Seri bystanders by their spokesman's frequent 223 interlocutions with them during the recital. Unfortunately the account was not clear as to the seasons selected, though the expressions indicated that the feasts are fixed for times at which the young are fully fledged. It would seem inconceivable that the Seri, with their insatiate appetite for eggs and tender young, should consciously respect a breeding time or establish a closed season to perpetuate any game; yet it is probable that the pelican is somehow protected in such wise that it is not only not exterminated or exiled, but actually fostered and cultivated. It is certain that the mythical Ancient of Pelicans is the [776] chief creative deity of Seri legend, and its living representative the chief tutelary of one of the clans; it is certain, too, that this fleshly fowl, sluggish and defenseless as it is on its sleeping grounds, would be the easiest source of Seri food if it were hunted indiscriminately; and it is no less certain that the omnivorous tribesmen would quickly extinguish the local stock if they were to make its kind, including eggs and young, their chief diet; yet it survives in literal thousands to patrol the waters of all Seriland in far-stretching files and vees seldom out of sight in suitable weather. On the whole, it would seem evident that an interadjustment has grown up between the tribesmen and their fish-eating tutelary during the centuries, whereby the fowl is protected, albeit subconsciously only, during the breeding seasons; and in view of other characteristics of the tribe it would seem equally evident that the protection is in some way effected by means of ceremonies and tabus.

Somewhat analogous, though apparently less ceremonial, expeditions are made to Isla Patos and other points in search of ducks, and to Isla [222] San Esteban, and still more distant islands in search of eggs (preferably near the hatching point) and nestlings; while the abundant waterfowl of the region are sought in Rada Ballena and other sheltered bays, as well as in such landlocked lagoons as those of Punta Miguel and Punta Arena. This hunting involves the use of bows and arrows, [411] though the archery of the tribe pertains rather to the chase of larger land game, and apparently attains its highest development in connection with warfare. No specialized fowling devices have been observed among the Seri; and their autonomous recitals, the facies of their artifacts, and the observed habits of the tribe (especially the youth) with respect to birds, all indicate that ordinary fowling holds a subordinate place in Seri craft—i. e., that it is a fortuitous and emergency avocation, rather than an organized art like turtle-fishing and water-carrying. Concordantly, culinary processes are not normally employed in connec- [412] tion with waterfowl, and the customary implements used for incising the skin and severing other tissues are the shell-cup, which is carried habitually for other purposes, the cane-splint, which appears to be improvised on occasion and never carried habitually, and the ubiquitous hupf.

Probably second in importance among Seri prey, as a food-source 262 merely, stand the multifarious fishes with which the waters of Seriland teem, particularly if the class be held to comprise the cetaceans and seals and selachians ranked as leaders of the fish fauna in Seri lore.

Naturally, whales lie outside the ordinary range of Seri game, yet 225 they are not without place in the tribal economy. During the visit to the Seri rancheria near Costa Rica in 1894, it was noted that various [173] events—births, deaths, journeys, etc—were referred to "The Time of the Big Fish"; and it was estimated from apparent ages of children and the like that this chronologic datum might be correlated roughly with the year 1887. The era-marking event was memorable to Mashém, to the elderwomen of the Turtle clan, and to other mature members of the group, because they had been enabled thereby to dispense with hunting and fishing for an agreeably long time, and because they had moved their houses; but the providential occurrence was not interpreted at the time. On visiting Isla Tiburon in 1895, the interpretation became clear; along 172 the western shore of Rada Ballena, near the first sand-spit north of the bight, lay the larger bones of a whale, estimated from the length of the mandibles and the dimensions of the vertebræ to have been 75 or 80 feet long. It was evident that the animal had gone into the shoal water at exceptionally high tide and had stranded during the ebb; while the condition of the bones suggested an exposure to the weather of perhaps half a dozen years. On the shrubby bank above the beach, [361] hard by the bleaching skeleton, stood the new rancheria, the most extensive seen in Seriland, comprising some fifteen or twenty habitable jacales; and fragments of ribs and other huge bones about and within the huts[1] attested transportation thither after the building, while the shallowness of the trails and the limited trampling of the fog 172 shrubbery gave an air of freshness to the site and surroundings. The 262 traditions and the relics together made it manifest that "The Time of the Big Fish" had indeed marked an epoch in Seri life; that when the leviathan landed (whether through accident or partly through efforts of balsa men) it was quickly recognized as a vast contribution to the Seri larder; and that some of the clans, if not the entire tribe, gathered to gorge first flesh and blubber, next sun-softened cartilage and chitin, and then epiphyses and the fatter bones. Some of the ribs were splin- [252] tered and crushed, evidently by blows of the hupf, in order to give access to the cancellate interiors; several of the vertebræ were battered and split, and nearly all of the bones bore marks of hupf blows, aimed to loosen cartilaginous attachments, start epiphyses, or remove spongy and greasy processes. Little trace of fire was found; in one case a mandible was partly scorched, though the burning appeared to be fortuitous and long subsequent to the removal of the flesh; and a bit of charred and gnawed epiphysis, much resembling the fragments of half-cooked turtle plastron scattered over Seriland, was picked up in

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[1] One of the smaller vertebræ and part of a rib are shown in the upper figure of plate VI.

172 one of the huts. The condition of the remains and the various indications connected with the rancheria corroborated the tradition that the 262 great creature had afforded unlimited and acceptable food for many moons; and various expressions of the tradition indicated that the event, though the most memorable of its class, was not unique in Seri lore.

A few bones and fragments of skin of the seal were found in and 225 about the rancherias on Isla Tiburon, and an old basket rebottomed with sealskin was picked up in a recently abandoned jacal on Rada Ballena; a few bones provisionally identified with the porpoise (which haunts Boco Infierno in shoals) were also found amid the refuse about the old rancheria at the base of the long sand-spit terminating in Punta Tormenta; but nothing was learned specifically concerning the chase and consumption either of these animals or of the abundant sharks from which the island is named.

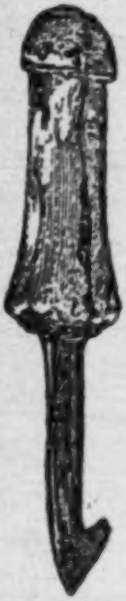
FIG. 21—Fish-spearhead.

Among the exceedingly limited food supplies brought 262 from the coast by the Seri group at Costa Rica in 1894, were rank remnants of partly desiccated fish, usually gnawed down to heads and tails; and Mashém and others spoke of fish as a habitual food, while Señor Encinas regarded it as the principal element of the tribal dietary. The harder bones and heavier scales of [172] several varieties of fish were also found abundantly among the middens of both mainland and Tiburon shores in 1895. None of the remains bore noticeable traces of fire; and all observations, including those of Señor Encinas, indicate that the smaller varieties of fish are habitually eaten raw, either fresh or partially dried, according to the state of appetite at the time of taking—or the condition of finding when picked up as beach flotsam. But a single piscatorial device was observed, 227 i. e., the barbed point and foreshaft, shown in figure 21—the iron point being, of course, accultural, and probably obtained surreptitiously. This harpoon, which measures 6 inches in length over all, is designed for use in connection with the main shaft of a turtle-catching tackle; and it is evidently intended for the larger varieties, perhaps porpoises or sharks. In 1827 Hardy observed a related device:

> They have a curious weapon which they employ for catching fish. It is a spear with a double point, forming an angle of about 5°. The insides of these two points, which are 6 inches long, are jagged, so that when the body of a fish is forced between them, it can not get away on account of the teeth.[1]

222 Don Andrés Noriega, of Costa Rica, described repeatedly and cir-
325 cumstantially a method of obtaining fish by aid of pelicans, in which a

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[1] Travels, p. 298.

222 young or crippled fowl was roped to a shrub or stone, to be fed by his
825 fellows; when at intervals a youth stole out to rob the captive's pouch. At first blush this device would seem to rise above the normal industrial plane of the Seri and to lie within the lower stages of zooculture, like the cormorant fishing of China if not the hawking of medieval Europe; yet on the whole it may be deemed fairly consistent with that cruel yet mutually beneficial toleration between tribesmen and pelicans attested by the preservation of the avian communal, as already noted. Moreover, Don Andrés observations are in accord with early notes
171 of the exceedingly primitive aborigines of California, from whom the Seri have undoubtedly borrowed various cultural suggestions; thus
222 Venegas quotes Padre Torquemada as saying:

825

> I accidentally found a gull tied with a string and one of his wings broke. Around this maimed bird lay heaps of excellent pilchards, brought thither by its companions; and this, I found, was a stratagem practiced by the Indians to procure themselves a dish of fish; for they lie concealed while the gulls bring these charitable supplies, and when they think that little more is to be expected they seize upon the contributions.

The padre says also of these gulls that "they have a vast craw, which in some hangs down like the leather bottles used in Peru for carrying water, and in it they put their captures to carry them to their young ones"—from which it is evident that he refers to the pelican. Venegas adds, "Such are the mysterious ways of Providence for the support of his creatures!"[1] And in the margin of his accompanying "Mapa de la California", he introduces a vigorous picture of a captive fowl, its free fellow, and the mess of fish, the cut being headed "Alcatrazes" (pelicans).

Despite these devices, the dearth of fishing-tackle among the Seri is
227 evidently extreme. Save in the single specimen figured, no piscatorial apparatus of any sort was found among the squalid but protean possessions at the Costa Rica rancheria; neither nets nor hooks nor rods nor lines nor any other device suitable for taking the finny game were found in the scores of jacales containing other artifacts on Tiburon; while Señor Encinas was conversant only with the simple method of taking fish by hand from the pools and shallows left by receding breakers or ebbing tides. This dearth of devices is significantly harmonious with other Seri characteristics: it accords with the leading place assigned the turtle in their industry and their lore; it is in harmony with that primitive and nonmechanical instinct which leads them to rely on bodily strength and skill and swiftness rather than on extracorporeal artifacts in their crude and incomplete conquest of nature; and it is a manifest expression of relation with their distinctive physical environment—for the ever-thundering breakers of their gale-swept coast are abundant, albeit capricious, bringers of living grist, while the offshore gales at low tide lay bare hundreds of acres of shoaler

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[1] History of California, 1759, vol. I, p. 41.

bottoms literally writhing with fishes stranded among beds of mollusks 227 and slimy with the abounding plankton of a fecund coast. The region is one of ample, albeit lowly, food supply, where every experience tends toward inert reliance on providential chance, and where the stimulus of consistently conscious necessity seldom stirs the inventive faculty.

Closely connected with fish as a Seri food-source are the various 262 molluscan and crustacean forms collectively called shellfish; and these contribute a considerable share of the sustenance of the tribe.

Apparently the most important constituent of this class of foods is the Pacific coast clam, which abounds in the broad mud-flats bordering Laguna La Cruz and other lagoons of Seriland, and which was still more abundant during a subrecent geologic epoch, to judge from the immense accumulation of the shells in Punta Antigualla. The clams 226 are usually taken at low tide, without specialized apparatus. They are located by feeling with the feet in shallow water, and caught either with toes or with fingers, to be tossed into any convenient receptacle. When the water is entirely withdrawn from the flats, they are located by means of their holes, and are extricated either with a shell-cup or with some other improvised implement. Frequently the entire mess is [252] thrown into a fire until the shells open, when they are withdrawn and the mollusks devoured practically raw; perhaps more commonly the shells are opened by blows of the hupf, and eaten without semblance of cooking; and, except on the surface, no trace of roasting was found among the vast accumulations of shells in Punta Antigualla.

Perhaps second to the clam in frequency of use is the local oyster, [262] which abounds about the more sheltered shores of Tiburon. It is gathered with the hands, aided perhaps by a stone or stick for dislodging the shells either from the extended offshore beds at extreme low water, or from the roots of a mangrove-like shrub at a medium stage. The [252] shells, like those of the clam, are frequently opened by partial roasting; 262 and shells, sometimes scorched, are extensively scattered over the interior, indicating that the oyster is a favorite portable food. The popularity of this bivalve is shared by the Noah's-ark (*Arca*), to which some mystical significance is apparently ascribed; and the abundant limpets and bivalves and other mollusks are eaten indiscriminately, to judge from the abundance of their shells in the middens. The ordinary crab, too, is a favorite article of food, and its claws are numerous in camp and house refuse; while the lobster-like deep-water crab is introduced into the menu whenever brought to the surface by storms, as shown by its massive remains in the middens.

On the whole, shellfish form a conspicuous factor in Seri economy by reason of the considerable consumption of this class of food; but, viewed in the broader industrial aspect, the produce is notably primitive, and significant chiefly as indicating the dearth of mechanical and culinary devices.

224 While by far the larger share of Seri sustenance is drawn from the sea, a not inconsiderable portion is derived from the land; for the warriors and striplings and even the women are more skilful hunters than fishers.

The larger objects of the feral chase are deer of two or three species (the bura, or mule-deer, being most conspicuous and easiest taken), antelope, and mountain sheep; to which the puma, the jaguar, and perhaps two or three other carnivores might be added. The conventional method of taking the bura and other deer is a combination of stalking and coursing, usually conducted by five of the younger warriors, though three or four may serve in emergency; any excess over five being regarded as superfluous, or as a confession of inferiority. The chase is conducted in a distinctly ceremonial and probably ritualistic fashion, even when the finding of the game is casual, or incidental to a journey: at sight of the quarry, the five huntsmen scatter stealthily in such manner as partially to surround it; when it takes fright one after the other strives to show himself above the shrubbery or dunes in order to break its line of flight into a series of zigzags; and whether successful in this effort or not they keep approximate pace with it until it tires, then gradually surround it, and finally rush in to either seize it in their hands or cripple it with clubs—though the latter procedure is deemed undignified, if not wrong, and hardly less disreputable than complete failure. When practicable the course is laid toward the rancheria or camp; and in any event the ideal finish is to bring the animal alive into the family group, where it may be dissected by the women, and where the weaklings may receive due share of the much-prized blood and entrails. The dissection is merely a ravenous 264 rending of skin and flesh, primarily with the teeth (perhaps after oblique bruising or tearing by blows with the hupf over strongly flexed joints), largely with hands and fingers aided anon by a foot planted on the carcass, and partly with some improvised device, such as a horn or tooth of the victim itself, the serrated edge of a shell-cup, or perhaps a sharp-edged cane-splint from a broken arrow carried for emergency's sake. Commonly the entire animal, save skin and harder bones, is gulped at a sitting in which the zeal of the devotee and the frenzy of the carnivore blend; but in case the group is small and the quarry large, the sitting is extended by naps or prolonged slumberings, and [252] the more energetic squaws may even trouble to kindle a fire and partially cook the larger joints, thereby inciting palled appetite to new efforts. Finally the leg bones are split for the marrow and their ends [237] preserved for awls; the horns are retained by the successful huntsmen as talisman-trophies; while the skin is stretched in the desert sun, [281] scratched and gnawed free of superfluous tissue, rubbed into partial pliability, and kept for bedding or robe or kilt.

224 The chase of the hare is closely parallel to that of the deer save that 857 it is conducted by striplings, who thereby serve apprenticeship in hunt-

ing and at the same time enrich the tribal larder with a game beneath 224 the dignity of the warriors; while still smaller boys similarly chase the 857 rabbit, which is commonly scorned by the striplings. The conventional hare-hunting party is three, and it is deemed disreputable to increase this number greatly. The youths spread at sight of the game and seek to surround it, taking ingenious and constant advantage of the habit of the hare to run obliquely or in zigzags to survey more readily the source of its fright; for some time they startle it but slightly by successive appearances at a distance, but gradually increase its harassment until it bounds hither and thither in terror, when they rapidly close in and seize it, the entire chase commonly lasting but a few minutes. The quarry is customarily taken alive to camp, where it is quickly [264] rent to fragments and the entrails and flesh and most of the bones consumed; the skin usually passes into possession of a matron for use as [281] infantile clothing or cradle bedding, while the ears are kept by the youth who first seized the game until his feat is eclipsed by some other event—unless chance hunger sooner tempts him to transmute his trophy into pottage.

While the collective, semiceremonial style of chase alone is thor- 224 oughly good form in Seri custom, it is often rendered impracticable by [364] the scattering of the tribe in separate families or small bands, in which case the hare and its associates, like the larger carnivores customarily, are taken by strategy rather than by strength. This form of chase is largely individual; in it archery plays a leading rôle; and in it, too, ambuscade, stealthy lying in wait, and covert assault attain high development. It is closely analogous with the warfare typical of the tribe; and it is especially noteworthy as one of the most effective stimuli to intellectual activity, and hence to the development of invention—if the term may be applied to industrial products so lowly as those of the Seri.

The chief artifact produced by the strategic chase on land would seem to be the analogue of the harpoon used at sea, i. e., the arrow. 411 This weapon is one of the three or four most highly differentiated and thoroughly perfected of the Seri artifacts, ranking with canteen-olla and balsa, and perhaps outranking the turtle-harpoon. It is fabricated with great care and high skill, and with striking uniformity in details of material and construction. A typical example is 25 inches in length and consists of three pieces—point, foreshaft, and main shaft (feathered toward the nock). The foreshaft is 8½ inches long, of hard wood carefully ground by rubbing with quartzite or pumice into cylindrical form, about three-eighths of an inch in diameter at the larger end and tapering slightly toward the point; the larger end is extended by careful grinding into a tang which is fitted into the main shaft, the joint being neatly wrapped with sinew. This main shaft is a cane-stalk (*Phragmites communis?*) 15 or 16 inches long, carefully selected for size and well straightened and smoothed; it is feathered with three equidistantly-

411 placed wing-feathers of hawk or falcon, neatly prepared by removing a thin strip of the rachis bearing the wider vexillum and attaching it by sinew wrappings at both ends, the feathers being about 5½ inches in length. The nock is a simple rounded notch, placed just below a joint and supported by the sinew ferrule; there is no foot-plug. The favorite point is a bit of flotsam hoop-iron, ground into elongate triangular shape with projecting barbs, and a short tang or shank fitted into a shallow notch in the foreshaft, cemented there with mesquite gum, and finally fixed firmly with sinew wrappings. A typical iron-point arrow, with bow and quiver, is depicted in plate XXX. Alternative points are of rudely chipped stone (two examples are illustrated in figure 37) somewhat clumsily attached to the foreshaft by mesquite gum and sinew wrapping; while the arrows used by boys and hunters of small game are usually pointless, the tip of the foreshaft being sharpened and hardened by slight charring. In some of the arrows, especially those designed for use in war, the foreshaft is notched, or else loosely attached to the main shaft, in order that it may be detached from the main shaft and remain in the body of enemy or prey. The foreshaft is commonly painted some bright color (red is prevalent), while the points and attachments of the "poisoned" specimens are smeared with some greasy substance.

The aboriginal Seri arrow has undoubtedly been modified during the centuries since the coming of Cortés and Mendoza with their metal-armed troopers; yet certain inferences as to the indigenous form of the weapon are easily drawn from its construction and the homologies of its parts.

The first feature of the artifact to attract attention is the relative clumsiness of attachment and frequent absence of points. The chipped-stone points are so rude as to be quite out of harmony with the otherwise delicately wrought and graceful arrow, while the attachment is strikingly crude; and it is still more noteworthy that the very name for stone arrowpoint was little understood at Costa Rica, and was obtained only after extended inquiry and repeated conferences among the older informants. Even the attachment of the effective points made from hoop-iron is bad constructionally; the sinew wrapping is carried around the entire blade in such manner as to sheathe the sharply ground edges and itself be cut on contact with first tissue; and the fitting and wrapping are so rude as to be incongruous with the rest of the apparatus. On the whole the suggestion is strong that the arrowpoint is accultural—and this suggestion is further strengthened 174
by the very existence of the practically functionless, and hence manifestly vestigial, hard-wood foreshaft. Turning to the structural homol- 411
ogies, the observer is at once struck with the parallelism running through the three most conspicuous compound artifacts found among the Seri, i. e., the harpoon, the fire-drill, and the arrow. All of these alike consist of two essential parts, main shaft and foreshaft; all are

akin in function even in the superficial view of the Caucasian, and are 174 much more closely related in primitive thought—indeed the fire-drill is 411 but a featherless and nockless arrow, with the foreshaft charred at its fire-giving tip; and all are closely linked in language and allied with other terms in such wise as practically to establish identity among them in the thinking of their lowly makers (though unfortunately the incomplete vocabularies extant are insufficient for full study of the linguistic homologies). Briefly the indications are that the harpoon was the primary device, and that its foreshaft was a tooth of an aquatic fish-eater like the seal, or perchance in some cases an os penis; that its lineal successor was a loose-head lance for use on sea and land, at first with the unaided hand and later with the atlatl, or throwing-stick (the lance being now extinct, though recorded by early visitors to Seriland); that the next artifact-generation in the direct line was represented by the arrow, foreshafted with hard wood or tooth, made light and graceful and loose-headed or not, according to needs, and by the substitution of bow for atlatl; and that a somewhat aberrant line was marked by the taming of fire, its reproduction by the modified arrow, and the differentiation of fire-stick from arrow and either atlatl or bow.

In tracing these stages in technologic growth, it is to be remembered 811 that the Seri are so primitive as to betray some of the very beginnings of activital concepts; that to them zoic potencies are the paramount powers of the cosmos; that in their simple thought fire is a bestial rather than a physical phenomenon; that in their naive philosophy the production of devouring flame is of a kind with vital birth and a similitude of sexual reproduction; and that according to their notions the conquest of quarry, including fire, is made practicable only by aid of the mystical potencies of beasts and flames gained through invocatory use of symbols or actual organs.

In the Seri tongue the term "fire-drill" is *kaak*, an indefinite generic 192 meaning "kind" or "strong kind", with an egocentric connotation ("Our-Strong-Kind"), as in the proper tribal designation *Kun-kaak* or 372 *Km-kaak*; while the term for the nether fire-stick or hearth is either *maam* ("woman", or more properly "mother"), or else (and more commonly) *kaak-maam*, which may be rendered "Kind-Mother"—the "Kind", as among primitive folk generally, comprising both men and tutelary beasts, and in this case fire as the most mysterious of the beasts; there is thus a suggestive analogy between the designation for the fire-producing apparatus and that for the tribe itself. It should be noted that 000 the zoic concept of fire is widespread among the more primitive peoples of various provinces, and sometimes persists in recognizable form in higher culture (witness the fire-breathing dragons of various mythologies, the "Red Flower" notion gathered in India by Kipling, etc); also that the ascription of sex to the fire-sticks is prevalent among North American tribes, and at once helps to interpret the development of the fire-drill, fire-syringe, and other primitive devices, such, for example, as

000 those so fully described by Hough,[1] and serves to explain the otherwise obscure genesis of the fire-sense, which must have accompanied and shaped that most significant of all steps in human progress, the conquest of fire.

The modern coordinate of the Seri arrow is the bow, made preferably from a straight and slender branch of the palo blanco. 411 A typical specimen is illustrated in plate XXX; it is 4 feet 9½ inches long, with the outer face convex and the inner face flat; greatest width 1⅜ inches, narrowed to 1¼ inches at the hand-hold; thickness at the hand-hold 1 inch, thinning to five-eighths inch at 8 inches from this point; tapering gradually in both dimensions toward the extremities, which are rudely notched to receive the cord (of mesquite-root fiber). The specimen [284] illustrated has been cracked and repaired in two places; in one place the repair was effected by a rough wrapping of sinew, and in the other by slipping over the wood a natural sheath of rawhide from the leg of a deer. The specimen is of added interest in that it combines bow [372] and nether fire-stick ("Strong-Kind-Mother"), one of the friction holes being worn out to the notched margin, and the other remaining in usable condition, as shown in the enlarged marginal drawing.[2]

Compared with the delicately finished and graceful arrow, the typical bow is a rude and clumsy device; it displays little skill in the selection and shaping of material, and evidently involves little labor in manufacture—indeed, the indications are that more actual labor is spent in the construction of a single arrow than in the making of a bow, while the arrow-making is expert work, betokening craft of a high order, and the bow-making little more than simple handiwork of the lowest order. The comparison affords some indication of the genesis [174] of Seri archery, and at the same time corroborates the independent suggestion that the arrow is of so much greater antiquity than the bow as to represent a distinct stage in cultural development—though the precise cultural significance of the bow is not easily ascertained.

Efforts were made to have different Seri warriors at Costa Rica in 1894 114 assume the normal archery attitude, with but moderate success, the best pose obtained (illustrated in plate XXVIII) being manifestly unnat- 123 ural and a mere reflection of the attitude in the mind of the Caucasian 126 poser; while the results of inquiries served only to indicate that the normal archery attitude was purposely avoided for reasons not ascertained. Fortunately another observer was more successful: in the course of the United States hydrographic surveys in 1873, Commander (now Admiral) Dewey received several visits from Seri warriors on board the *Narragansett*; and on the occasion of one of these visits, Mr 114 Hector von Bayer, of the hydrographic party, caught a photograph of 126 an archer in the act of drawing his bow. The negative was accident-

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[1] Fire-making apparatus in the U. S. National Museum; Smithsonian Report for 1888, pt II, 1890, pp. 531-587, and elsewhere.

[2] Ordinarily the nether fire-stick is of soft and porous wood, [illegible] palm-wood and water-logged pine being preferred.

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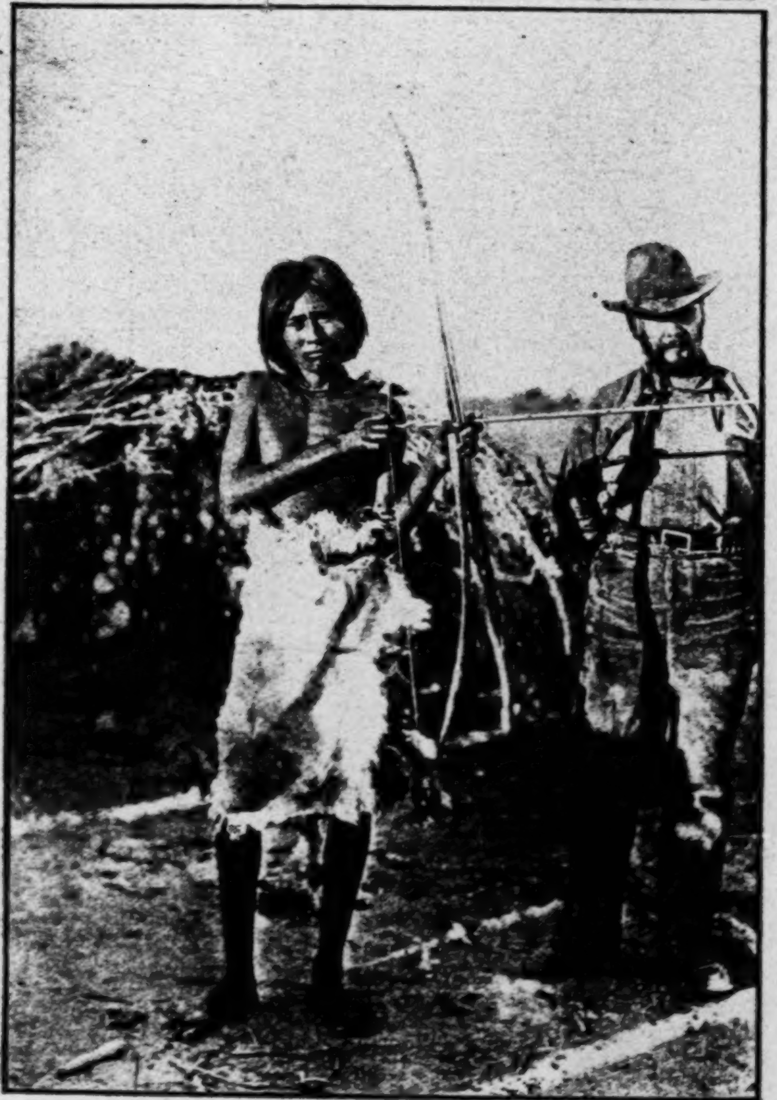

SERI ARCHER AT REST

[p.200 A]

ally shattered, and no prints are known to have been made from it; 114
but the fragments were carefully joined, and were kindly transferred 126
to the Bureau by Mr Von Bayer in 1897, and from them plate XXIX
was carefully drawn. The posture (partly concealed by the drapery) is
extraordinary, being quite beyond the reach of the average human, and 411
impossible of maintenance for any considerable interval even by the
well-wonted Seri. The posture itself partly explains the difficulty of inducing the warriors at Costa Rica to assume it, since it is essentially a fleeting one, and indeed but a part of a continuous and stressful action—it is no less difficult to assume, or to catch in the camera, than the typical attitude of a baseball pitcher in action. The posture thus fortunately caught is quite in accord with the accounts of Seri archery from the esoteric side given by Mashém, and with the exoteric observations of Señor Encinas, Don Andrés, and others; for all accounts agree in indicating that the archer commonly rests inert and moveless as the watching feline up to a critical instant, then springs into movement as swiftly as the leaping jaguar, and hurls, rather than shoots, one, two, or three arrows before rushing in to the death or skulking to cover as the issue may require.

The Seri archery habit is in every way consistent with the general habits of the tribe, alike in the chase and in warfare, in which the tribesmen, actuated by the fierce blood-craze common to carnivores, either [224] leap on their prey with purpling eyes and gnashing teeth, or beat quick and stealthy retreat; and it is especially significant in the light thrown on the bow as a device for swift and vigorous rather than accurate offense, an apparatus for lengthening the arm still more than does the harpoon, and at the same time strengthening and intensifying its stroke. The quick-changing attitudes of half hurling are equally suggestive of the use of the atlatl, and support Cushing's hypothesis[1] that the bow was derived from the corded throwing-stick. While the [171] critical posture of Seri archery is unique in degree if not in kind in the western hemisphere, so far as is known, an approximation to it (illustrated in fig. 22) has been observed in Central Africa.[2] On the whole the Seri mode of using the bow, like its crude form and rude [174] finish, indicates that it is a relatively new and ill-developed artifact, possibly accultural though more probably joined indigenously with the archaic arrow to beget a highly effective device for food-getting as well as for warfare; while the genetic stages are still displayed not only in the homologies between arrow and harpoon, but by the common functions of both arrow and bow with the fire-sticks.

Concordantly, as indicated by the use of the archery apparatus, the 224 individual taking of large game is effected either by stealthy stalking or by patient ambuscade ended by a sudden rush; when, if the chase is successful, the quarry is rent and consumed as at the finish of the

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[1] The Arrow; Proceedings Am. Ass. Adv. Sci., vol. XLIV, 1896, pp. [illegible].

[2] Glave's Journey to the Livingston Tree, The Century Magazine, vol. LII, 1896, p. [illegible].

224 semiceremonial collective chase. The fleet but wary antelope, the pugnacious peccary, the wandering puma and jaguar, and the mountain sheep of the rocky fastnesses, are among the favorite objects of this style of chase; while the larger land birds and some of the water-fowl are taken in similar fashion.

The smaller land game comprises a tortoise or two, all the local

[009]

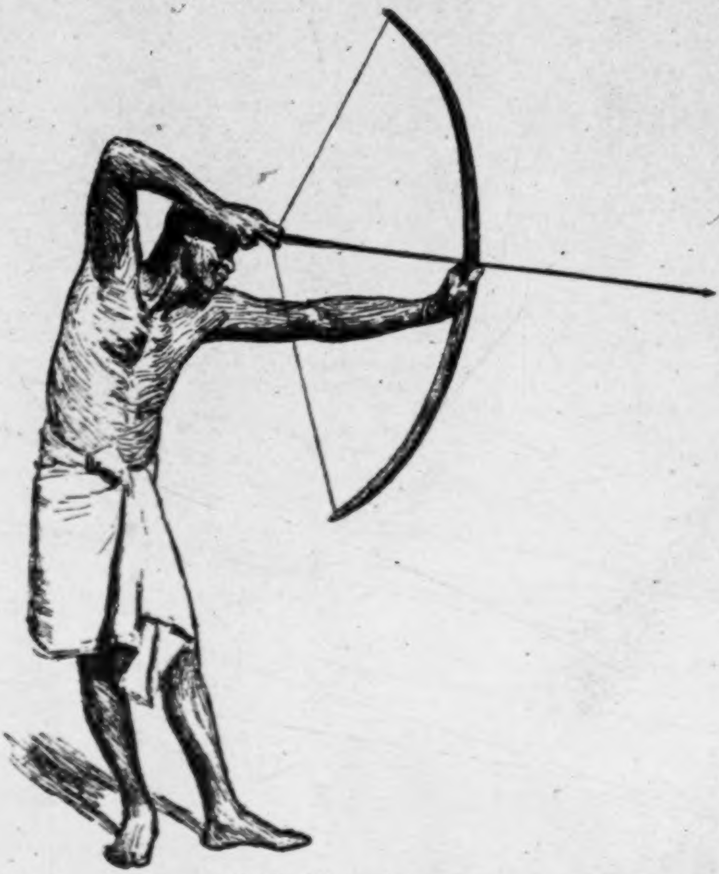

FIG. 22—African archery posture.

snakes and lizards, and a good many insects, besides various birds, including hawks and owls, as well as the eaters of seeds and insects. The crow and vulture are also classed as edible, though they are rare
[136] in Seriland, probably because of the effective scavengering of the
[262] province by its human residents. It is a significant fact that the

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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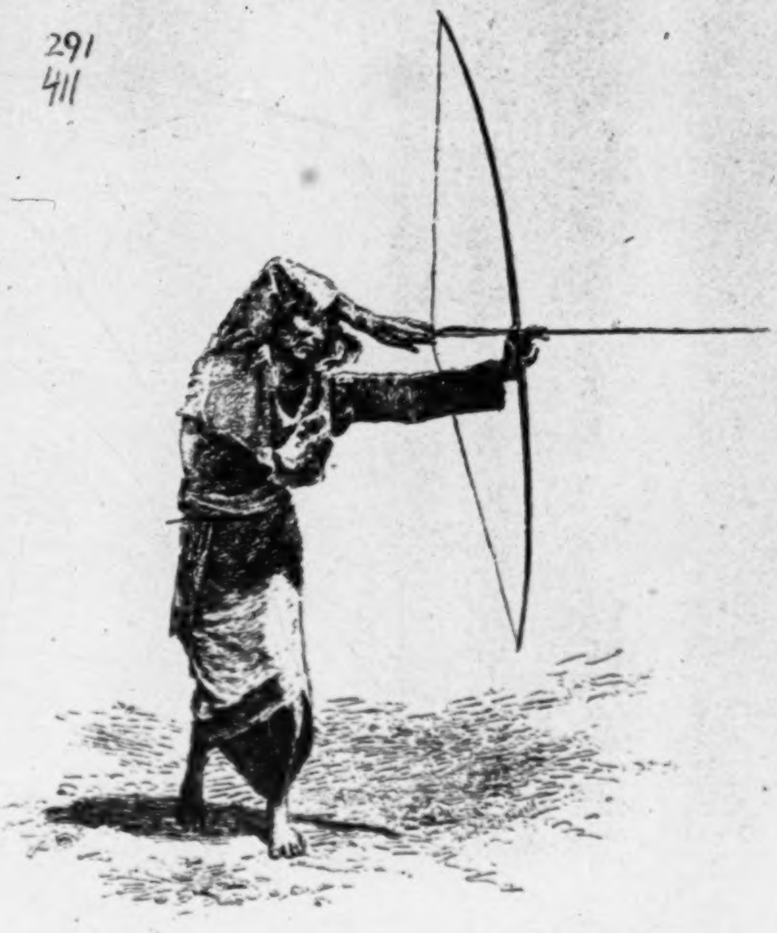

SERI ARCHER AT ATTENTION

[p. 202 A]

smaller rodents, especially the long-tail nocturnal squirrel, are 136 224 excluded from the Seri menu by a rigidly observed tabu of undiscovered meaning. A general consequence of this tabu is readily observed [262] on entering Seriland; there is a notable rarity of the serpents, the high-colored and swift efts, and the logy lizards and dull phrynosomas so abundant in neighboring deserts, as well as of song birds and their nests; and this dearth is coupled with a still more notable abundance of the rodents, which have increased and multiplied throughout Seriland so abundantly that their burrows honeycomb hundreds of square miles of territory. A special consequence of the tabu is found in the fact that the myriad squirrel tunnels have rendered much of the territory [133] impassable for horses and nearly so for pedestrians, and have thereby served to repel invaders and enable the jealous tribesmen to protect their principality against the hated alien. Seriland and the Seri are remarkable for illustrations of the interdependence between a primitive folk and their environment; but none of the relations are more striking than that exemplified by the timid nocturnal rodent, which, protected by a faith, has not only risen to the leading place in the local fauna, but has rewarded its protectors by protecting their territory for centuries.

In both the collective and the strategic chase, constant advantage is taken of weakness and incapacity, whether temporary or permanent, of the prospective quarry; so that diseased and wounded as well as sluggish and stupid animals are eliminated. The effect of this policy on the fauna is undoubtedly to extinguish the less capable species and to stimulate and improve the more capable; i. e., the presence of the human factor merely intensifies the bitter struggle for existence in which the subhuman things of this desert province are engaged. At the same time, the entrance of the human folk into the struggle characteristic of subhuman species serves to bar them from one of the most helpful ways to the advancement of their kind—i. e., the way leading through cotoleration with animals to perfected zooculture. The most 224 avidly sought weaklings in the Seri chase are the helpless young, and the heavily gravid dams which are pursued and rent to fragments with a horrid fury doubtless reflecting the practical certainty of capture and the exceptionally succulent tidbits afforded by the fetal flesh; naturally the cruel custom reacts on habitual thought in such wise that the very sight of pregnancy or travail or newborn helplessness awakens slumbering blood-thirst and impels to ferocious slaughter. To such custom and deep-planted mental habit may be ascribed some of the most shocking barbarities in the history of Seri rapine, tragedies too terrible for repetition save in bated breath of survivors, yet explaining the utter horror in which the Seri marauder is held on his own frontier. At the same time the hunting custom and the mental habit explain the blindness of the Seri to the rudiments of zooculture, and clarify their [825] intolerance of all animal associates, save the sly coyote that habitually

224 hides its travail and suckling in the wilderness, and perhaps the deified
[825] pelican.[1]

Parallel to the chase of the larger land game is the hunting of horses and other imported stock; for the animals are regarded in no other light than that of easy quarry. The horses of the Seri frontier, like those of wild ranges generally, are strongly gregarious, and the herds are well regimented under recognized leaders, so that the chase of their kind is necessarily collective on the part of both hunters and game; and the favorite method is for a considerable group of either warriors or women to surround the entire herd, or a band cut out from it, "mill" them (i. e., set them running in a gradually contracting circle) and occasionally dash on an animal, promising by reason of exceptional fatness or gravidness. The warrior's customary clutch is by the mane or foretop with one hand and the muzzle with the other, with his weight thrown largely on the neck, when a quick wrench throws the animal, and, if all goes well, breaks its neck;[2] while the huntress commonly aims to stun the animal with a blow from her hupf. In either case the disposition of the carcass is similar to that of other large quarry, save that thought is given to the danger of ensuing attack by vaqueros; so that it is customary to consume at once only the blood and pluck, and if time permits the paunch and intestines with their contents, and then to rend the remainder into quarters, which warriors or even women shoulder and rush toward their stronghold. Burros (which, next to the green turtle, afford the favorite Seri food) and horned cattle are commonly stalked and slain, or, at least, wounded with arrows, so that it is commonly the stragglers that are picked off; though sometimes several animals are either milled or rushed, and thrown by a

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[1] A single incident expressing the Seri sentiment toward travailing animals must be noted: a few minutes after the group shown in plate XI was photographed, a starveling cur—a female apparently of nearly pure coyote blood and within a week of term—slunk toward the broken olla-bottle in the left center of the picture, in which a scrap of horse-foot was simmering; the woman bending over the bottle suddenly straightened and shot out her foot with such force and directness that the cur was lifted entirely over the corner of the nearest jacal, and the poor beast fell stunned and moaning, a prematurely born pup protruding from her two-thirds of its length. The sound of the stroke and fall attracted attention throughout the group; the women smiled and grunted approval of the well-aimed kick, and a dozen children gathered to continue the assault. Partially recovering, the cur struggled to its feet and started for the chaparral, followed by the jeering throng; at first the chase seemed sportive only, but suddenly one of the smaller boys (the third from the left in the group shown in plate XVI) took on a new aspect—his figure stiffened, his jaws set, his eyes shot purple and green, and he plunged into the lead, and just before the harried beast reached cover he seized the protruding embryo, jerked it away, and ran off in triumph. Three minutes afterward he was seen in the shelter of a jacal greedily gorging his spoil in successive bites, just as the Caucasian boy devours a peeled banana. Meanwhile, two or three mates who had struck his trail stood around begging bites and snatching at chance blood spatters on earth, skin, or tattered rags; and as the victor came forth later, licking his chops, he was met by half jocular but admiring plaudits for his prowess from the dozen matrons lounging about the neighboring jacales. Parallel instances, both observed and gathered at second hand, might be added in numbers; but this may suffice as the sole specific basis for the generalization which places the Seri below the plane of possible assimilation—a generalization so broad as to demand some record of data which it would be more agreeable to ignore.

[2] This warrior's clutch, and the notion that it is discreditable if not criminal for the masculine adult to take recourse to weapons in hand-to-hand slaughter, are strongly suggestive of zoomimic motives and of studied mimicry of the larger carnivores, such as the jaguar—the "neck twister" of the Maya.

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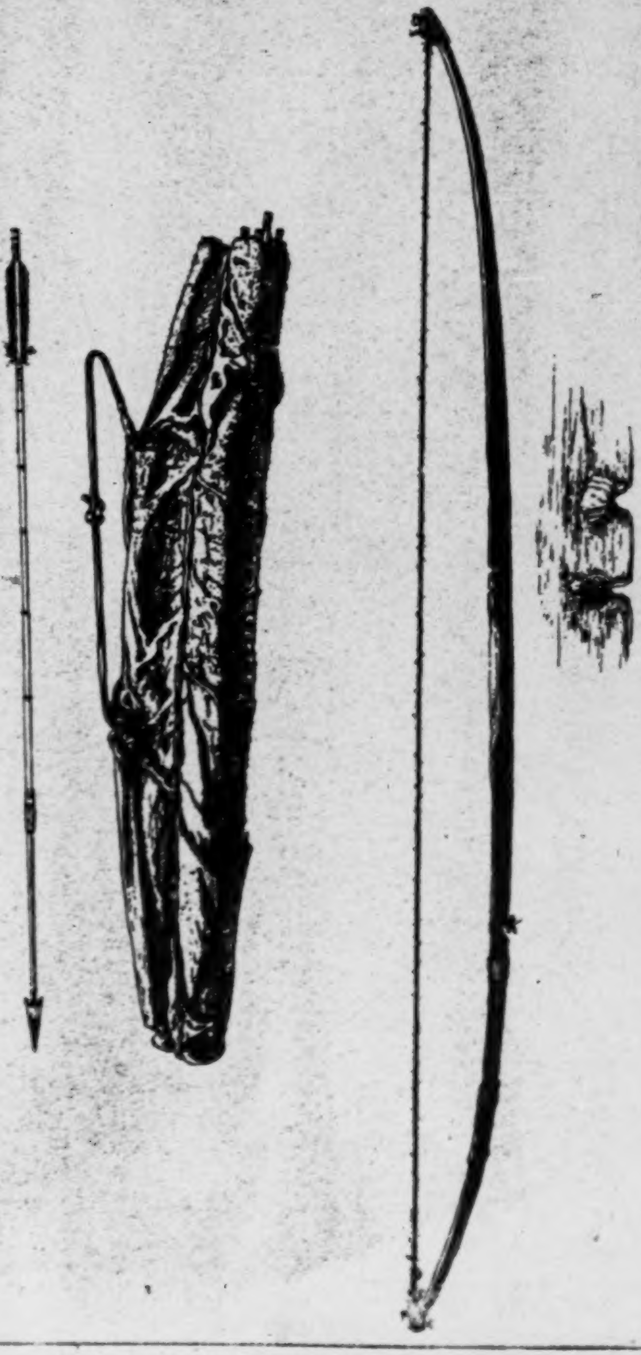

SERI BOW, ARROW, AND QUIVER

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224 strong wrench on the horns or stunned with a blow of war-club or hupf, as conditions may demand. Straggling swine and wandering dogs are occasionally ambushed or stalked and transfixed with arrows, torn hurriedly into fragments, or shouldered and carried off struggling, as exigency may require; while sheep and goats are practically barred from the entire Seri frontier because of their utter helplessness in the face of so hardy huntsmen.

224 648 The quantity of stock consumed by the Seri varies greatly with the policy of rancheros and vaqueros. At different times during the last two and a half centuries it has been estimated that the chief portion of the subsistence of the tribe was derived from stolen stock, and it is probable that during the early period of the Encinas régime this

[291] [483]

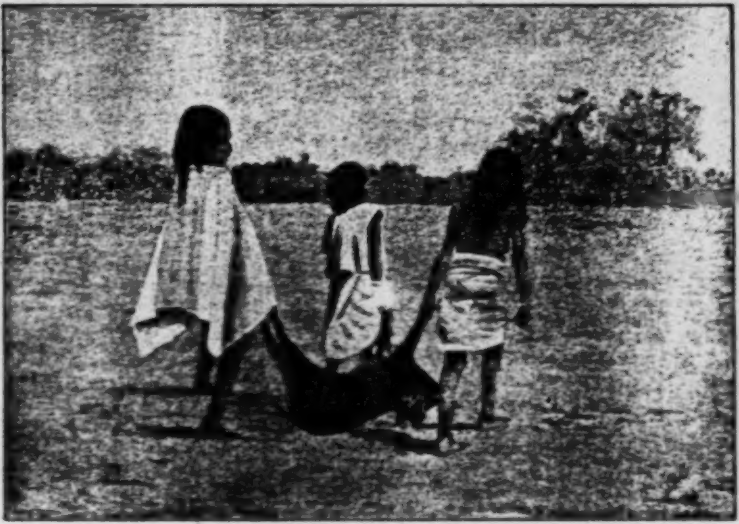

FIG. 23—Desiccated pork.

estimate was fair; but under the Draconian rule of a Seri head for each head of slaughtered stock, the consumption is reduced to a few dozen head annually, including superannuated, crippled, and diseased animals unable to keep up with the herds, those bogged in Playa Noriega and other basins during freshets, the stallions and bulls slain in strife for leadership of their bands, and the festering or semimummied carcasses gladly turned over by idle rancheros on the chance visits of Seri bands to the frontier (such as the specimen in the photograph reproduced in figure 23).

177 224 No special devices have been developed in connection with the chase for stock, nor has material progress been made in acquiring Caucasian devices. There are, indeed, indications of a disposition to use

177 224 knives in severing the tough integuments and tendons of horses and kine, although the tendency has not yet resulted (as elsewhere noted, ante, pp. 152–154) in the development of a knife-sense; and although boys on the frontier play at roping dogs, no effort to use the riata or any form of rope is made in the actual chase. As naively explained by Mashém amid approving grunts from his clan-mates, they have no time for ropes or knives when hungry.

A quantitatively unimportant yet by no means negligible fraction 262 of the normal diet of Seriland is vegetal; and while the sources of vegetal food are many and diverse, the chief constituent is a single product characteristic of American deserts, viz, the tuna, or prickly pear.

All of the cacti of the region yield tunas in considerable quantity. 222 The pitahaya is perhaps the most abundant producer, and its name is often given to the fruit; the huge saguaro affords an enormous annual yield, and the still more gigantic saguesa is even more prolific, especially in its immense forests along the eastern base of Sierra Seri; the cina adds materially to the aggregate product, while the nopal, or common prickly pear, contributes a quota acquiring importance from the facility with which it may be harvested. The fruits of all these cacti are sometimes classed as sweet tunas, in contradistinction from the sour tunas yielded in great abundance by the cholla and consumed with avidity by stock, though seldom eaten by men. The edible tunas average about the size of lemons, and resemble figs save that their skin is beset with prickles. The portion eaten is a luscious pulp, filled with minute seeds like those of the fig save that they are too hard for mastication or digestion, its flavor ranging from the sickly sweet of the overcultivated fig to a pleasant acidity. While occasional tunas may be found at any time during the year, the normal harvest occurs about midsummer, or shortly before the July-August humid season, and lasts for several weeks. During the height of the season the clans withdraw from the coast and give undivided attention to the collection and consumption of the fruits, gorging them in such quantities that, according to the testimony of the vaqueros, they are fattened beyond recognition. Commonly the tunas are eaten just as they are gathered, and the families and larger bands move about from pitahaya to pitahaya and from valley to valley in a slovenly chase of this natural harvest, until waning supply and cloying appetite drive them back to the severer chase of turtle and pelican. The fruit is not cooked, and never preserved save in the noisome way of nature, and is rarely transported in quantities or over distances of industrial importance; yet the product may have some connection with the basketry of the tribe. The devices for col- [412] lecting the fruits, especially from the lofty saguaro and saguesa, are mere improvisations of harpoon shafts, paloblanco branches, or chance cane-stalks carried primarily for arrow-making or balsa construction.

There is no such well-studied and semiceremonial apparatus for tuna gathering as, for example, the Papago device made from the ribs of the dead saguaro in accordance with traditional formula. 222 [412]

Perhaps second in importance among the vegetal constituents of Seri diet is the mesquite bean, which is gathered in random fashion whenever a well-loaded tree is found and other conditions favor. [262] The woody beans and still woodier pods are roughly pulverized by pounding with the hupf on any convenient stone used as an ahst (metate or mortar), or, if suitable stones are not at hand, they are carried in baskets or improvised bags to the nearest shore or other place at which stones may be found. 252 The half-ground grist is winnowed in the ordinary way of tossing in a basket; and the grinding and winnowing continue alternately until a fairly uniform bean meal is obtained. So far as was actually observed this is eaten raw, either dry in small pinches or, more commonly, stirred in water to form a thin atole; but expressions at Costa Rica indicated that the meal is sometimes stirred in boiling water or pot-liquor, and thus partially cooked, in times of rest and plenty.

Other vegetal products used as food comprise a variety of seeds collected from sedges and grasses growing about the mud-flats of Laguna La Cruz and other portions of the province, as well as the seeds and nuts of the scant shrubbery of shores and mountains; while a local seaweed or kelp is eaten in small quantity, apparently as a condiment, and is sometimes carried on journeys even as far as Costa Rica, where specimens were obtained in 1894. 262

It is of interest to note that one of the most distinctive constituents of the Sonoran flora, and one intimately connected with human life in the great neighboring province of Papagueria, is of negligible rarity in Seriland; this is the visnaga (*Echinocactus*, probably of two or three species), the thorniest of the cacti and the only one containing consumable pulp and sap. 137 This peculiar plant is of no small interest in itself as a striking example of the inverse relation between protective devices of chemical sort (culminating in acrid, offensive, or toxic juices) and the mechanical armaments so characteristic of desert plants;[1] it is of still deeper interest economically as the sole source of water over broad expanses of the desert, and one to which hundreds of pioneers and travelers have been indebted for their lives; and it is of interest, too, as a factor of Papago faith, in which the visnaga ranks among the richer guerdons of the rain gods. Throughout most of Papagueria this cactus is fairly abundant; usually there are several specimens to the square mile of suitable soil (it is not found in playas or on the ruggeder sierras), so that it is always within reach of the sagacious traveler; but it diminishes in abundance toward the borders of Seriland, and not more than a dozen examples were found in the portions of that province traversed by the 1895 expedition. Its rare occurrence,

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[1] Cf. The Beginning of Agriculture; The American Anthropologist, vol. VIII, Oct., 1895, pp. 350-375.

137 chiefly in the form of wounded and dwarfed specimens, seems to indicate that its original range comprised all Seriland; while its dearth suggests destruction nearly to the verge of extinction by improvident generations better armed with their hupfs and harpoons and shell-cups than the subhuman beasts against whom the plant is so well protected.

285 Aside from the universally used hupf and ahst (which may be
415 regarded as differentiated implements or tools), the only special device used in connection with vegetal food is the basket, or, rather, basketry tray (illustrated in figure 24). This ware is of the widespread coil type so characteristic of southwestern tribes. The coil is a wisp of stems and splints of a fibrous yet spongy shrub, apparently torote; and the woof consists of paloblanco (?) splints deftly intertwined by aid of an awl. The construction is fairly neat and remarkably uniform: the coiled wisps vary somewhat in size, both intentionally and inadvertently, ranging from an average of three-eighths of an inch toward the bottoms of the larger specimens to half that diameter in the smaller specimens and toward the margins of the larger. The initial coil starts in an indefinite knot, rather than a button, at the center; and the spiral is continuous throughout, the final coil being quite deftly worked out to a single splint smoothly stitched to the next lower spiral with the woof splints. The ware is practically water-tight, remarkably strong and resilient, and quite durable in the dry climate of Seriland. Ordinarily the basket is abandoned when the bottom decays or breaks, but an ancient specimen obtained on Isla Tiburon was roughly rebottomed with a patch of sealskin attached by means of sinew. The baskets are notably uniform in shape, though the size varies from 8 or 9 inches to fully 17 inches in diameter.

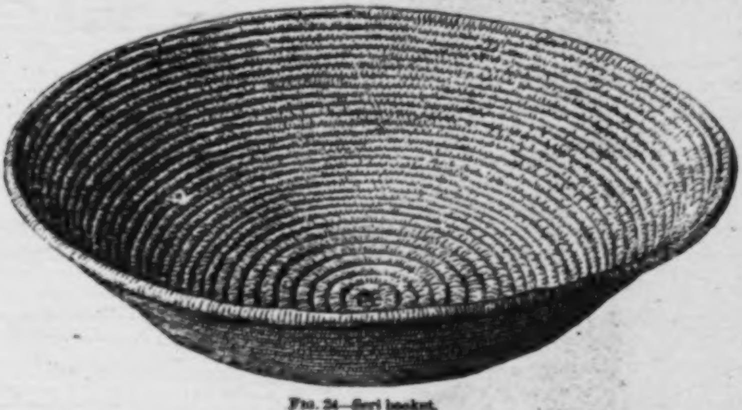

FIG. 24—Seri basket.

The most striking feature of the Seri basketry, as of the pottery, is extreme lightness in proportion to capacity, a quality due to the spongy character of the torote coil and to the thinness of the splints used in the woof. The inside dimensions, weight, and dry-measure capacity (filled to the level of the brim with rice) of two typical specimens approaching extremes in size are indicated in the accompanying table. As noted elsewhere, the ware is absolutely without decorative devices in weave, paint, or form; it is baldly utilitarian, a model of economy in material and in the balance between structure and function, approaching in this respect the thin-walled cantero-olla, the graceful balsa, and the light but effective harpoon. The structural correspondence of the ware to a widespread type and its limited use among the tribe suggest an accultural origin for the Seri basketry; but the delicate adjustment of means to ends in the manufacture and the strictly local character of the material quite as strongly suggest an indigenous development. 285 415 [531] [174]

Museum No.	Diameter	Depth	Weight	Capacity
174328....	38 cm. (15 in.)	9.5 cm. (3¾ in.)	492 g. (17 oz.)	6.25 l. (6.6 qt.)
174526a ..	23 cm. (9 in.)	5.0 cm. (2 in.)	142 g. (5 oz.)	1 l. (1.06 qt.)

It is impossible to portray justly the food habits of the Seri without some reference to a systematic scatophagy, which seems to possess fiducial as well as economic features. In its simplest aspect this custom is connected with the tuna harvests; the fruits are eaten in enormous quantity, and are imperfectly digested, the hard-coated seeds especially passing through the system unchanged; the feces containing these seeds are preserved with some care, and after the harvest is passed the hoard (desiccated, of course, in the dry climate) is ground between hupf and ahst, and winnowed in baskets precisely as are the mesquite beans; and the product is then eaten either dry or in the form of atole like the mesquite meal. In superficial view this food factor is the precise homologue of the "second harvest" of the California Indians as described by Clavigero, Baegert,[1] and others; but it gains importance, among 262 514 [251] [252] [171]

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[1] An Account of the Aboriginal Inhabitants of the Californian Peninsula, as given by Jacob Baegert, a German Jesuit missionary. . . . Translated and arranged for the Smithsonian Institution by Charles Rau; Ann. Rep. Smithsonian Inst. for 1863, pp. 352-369. Baegert's account of foods (pp. 363-367) is so apposite as to be worthy of quotation nearly entire:

"Notwithstanding the barrenness of the country, a Californian hardly ever dies of hunger, except, perhaps, now and then an individual that falls sick in the wilderness and at a great distance from the mission, for those who are in good health trouble themselves very little about such patients, even if these should happen to be their husbands, wives, or other relations; and a little child that has lost its mother or both parents is also occasionally in danger of starving to death, because in some instances no one will take charge of it, the father being sometimes inhuman enough to abandon his offspring to its fate. 000

"The food of the Californians, as will be seen, is certainly of a mean quality, yet it keeps them in a healthy condition, and they become strong and grow old in spite of their poor diet. The only period of the year during which the Californians can satisfy their appetite without restraint is the season of the pitahayas, which ripen in the middle of June and abound for more than eight weeks. The gathering of this fruit may be considered as the harvest of the native inhabitants. They can eat as much of it as they please, and with some this food agrees so well that they become corpulent during that period; and for this reason I was sometimes unable to recognize at first sight individuals, otherwise perfectly

262 the Seri at least, as the sole method of storing or preserving food-
514 supplies, and hence as the germ of industrial economy out of which a

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000 familiar to me, who visited me after having fed for three or four weeks on these pitahayas. They do not, however, preserve them, and when the season is over they are put again on short rations. Among the roots eaten by the Californians may be mentioned the yuka, which constitutes an important article of food in many parts of America, as, for instance, in the island of Cuba, but is not very abundant in California. In some provinces it is made into a kind of bread or cake, while the Californians, who would find this process too tedious, simply roast the yukas in a fire like potatoes. Another root eaten by the natives is that of the aloe plant, of which there are many kinds in this country. Those species of this vegetable, however, which afford nourishment—for not all of them are edible—do not grow so plentifully as the Californians might wish, and very seldom in the neighborhood of water; the preparations, moreover, which are necessary to render this plant eatable, require much time and labor. . . . I saw the natives also frequently eat the roots of the common reed, just as they were taken out of the water. Certain seeds, some of them not larger than those of the mustard, and different sorts in pods that grow on shrubs and little trees, and of which there are, according to Father Piccolo, more than sixteen kinds, are likewise diligently sought; yet they furnish only a small quantity of grain, and all that a person can collect with much toil during a whole year may scarcely amount to 12 bushels.

"It can be said that the Californians eat, without exception, all animals they can obtain. Besides the different kinds of larger indigenous quadrupeds and birds, they live nowadays on dogs and cats; horses, asses, and mules; then, on owls, mice, and rats; lizards and snakes; bats, grasshoppers, and crickets; a kind of green caterpillar without hair, about a finger long, and an abominable white worm of the length and thickness of the thumb, which they find occasionally in old rotten wood, and consider as a particular delicacy. The chase of game, such as deer and rabbits, furnishes only a small portion of a Californian's provisions. Supposing that for 100 families 500 deer are killed in the course of a year, which is a very favorable estimate, they would supply each family only with three meals in three hundred and sixty-five days, and thus relieve but in a very small degree the hunger and the poverty of these people. The hunting for snakes, lizards, mice, and field-rats, which they practice with great diligence, is by far more profitable and supplies them with a much greater quantity of articles for consumption. Snakes, especially, are a favorite sort of small game, and thousands of them find annually their way into the stomachs of the Californians.

"In catching fish, particularly in the Pacific, which is much richer in that respect than the Gulf of California, the natives use neither nets nor hooks, but a kind of lance—that is, a long, slender, pointed piece of hard wood—which they handle very dexterously in spearing and killing their prey. Sea-turtles are caught in the same manner.

"I have now mentioned the different articles forming the ordinary food of the Californians; but, besides these, they reject nothing that their teeth can chew or their stomachs are capable of digesting, however tasteless or unclean and disgusting it may be. Thus they will eat the leaves of the Indian fig-tree, the tender shoots of certain shrubs, tanned or untanned leather, old straps of rawhide, with which a fence was tied together for years; then, the bones of poultry, sheep, goats, and calves; putrid meat or fish swarming with worms, damaged wheat or Indian corn, and many other things of that sort which may serve to appease the hunger they are almost constantly suffering. Anything that is thrown to the hogs will be also accepted by a Californian, and he takes it without feeling offended, or thinking for a moment that he is treated below his dignity. For this reason no one took the trouble to clean the wheat or maize, which was cooked for them in a large kettle, of the black worms and little bugs, even if the numbers of these vermin had been equal to that of the grains. By a daily distribution of about 1½ bushels of bran (which they are in the habit of eating without any preparation) I could have induced all my parishioners to remain permanently in the mission, excepting during the time when the pitahayas are gathered.

"I saw one day a blind man, 70 years of age, who was busily engaged in pounding between two stones an old shoe made of raw deerskin, and whenever he had detached a piece he transferred it promptly to his mouth and swallowed it; and yet this man had a daughter and grown grandchildren. As soon as any of the cattle are killed and the hide is spread out on the ground to dry, half a dozen boys or men will instantly rush upon it and commence to work with knives, flints, and their teeth, tearing and scratching off pieces, which they eat immediately, till the hide is full of holes or scattered in all directions. In the mission of St. Ignatius and in others farther toward the north there are persons who will attach a piece of meat to a string and swallow it and pull it out again a dozen times in succession, for the sake of protracting the enjoyment of its taste.

171 "I must here ask permission of the kind reader to mention something of an exceedingly disgusting
and almost inhuman nature, the like of which probably never has been recorded of any people in the
262 world, but which demonstrates better than anything else the whole extent of the poverty, unclean-
ness, and voracity of these wretched beings. In describing the pitahayas I have already stated that
514 they contain a great many small seeds resembling grains of powder. For some reason unknown to
me these seeds are not consumed in the stomach, but pass off in an undigested state, and in order to
252 save them the natives collect during the season of the pitahayas that which is discharged from the

feeble thrift-sense may be regarded as emerging. And the rise of thrift 262
in Seriland, like esthetic and industrial beginnings generally, is shaped 514

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human body, separate the seeds from it, and roast, grind, and eat them, making merry over their 171
loathsome meals, which the Spaniards therefore call the second harvest of the Californians. [This
statement is corroborated in all particulars by Clavigero in his Storia della California, Venice, 1789, 252
vol. I, p. 117.] When I first heard that such a filthy habit existed among them I was disinclined to 262
believe the report, but to my utter regret I became afterwards repeatedly a witness to the proceeding,
which they are unwilling to abandon, like many other bad practices [probably because of the fiducial 514
character of the custom.—W J M.]. Yet I must say in their favor that they have always abstained
from human flesh, contrary to the horrible usage of so many other American nations who can obtain
their daily food much easier than those poor Californians.

"They have no other drink but the water, and heaven be praised that they are unacquainted with 000
such strong beverages as are distilled in many American provinces from Indian corn, the aloë, and other plants, and which the Americans in these parts merely drink for the purpose of intoxicating themselves. When a Californian encounters during his wanderings a pond or pool, and feels a desire to quench his thirst, he lies flat on the ground and applies his mouth directly to the water. Sometimes the horns of cattle are used as drinking vessels.

"Having thus far given an account of the different articles used as aliment by the aborigines of the peninsula, I will now proceed to describe in what manner they prepare their victuals. They do not cook, boil, or roast like people in civilized countries, because they are neither acquainted with these methods nor possessed of vessels and utensils to employ for such purposes; and, besides, their patience would be taxed beyond endurance if they had to wait till a piece of meat is well cooked or thoroughly roasted. Their whole process simply consists in burning, singeing, or roasting in an open fire all such victuals as are not eaten in a raw state." Without any formalities, the piece of meat, the fish, bird, snake, field mouse, bat, or whatever it may be is thrown into the flames or on the glowing embers, and left there to smoke and to sweat for about a quarter of an hour; after which the article is withdrawn, in most cases only burned or charred on the outside, but still raw and bloody within. As soon as it has become sufficiently cool, they shake it a little in order to remove the adhering dust or sand, and eat it with great relish. Yet I must add here, that they do not previously take the trouble to skin the mice or disembowel the rats, nor deem it necessary to clean the half-emptied entrails and maws of larger animals, which they have to cut in pieces before they can roast them. Seeds, kernels, grasshoppers, green caterpillars, the white worms already mentioned, and similar things that would be lost, on account of their smallness, in the embers and flames of an open fire, are parched on hot coals, which they constantly throw up and shake in a turtle shell or a kind of frying pan woven out of a certain plant. What they have parched or roasted in this manner is ground to powder between two stones, and eaten in a dry state. Bones are treated in like manner.

"They eat everything unsalted, though they might obtain plenty of salt; but since they cannot dine every day on roast meat and constantly change their quarters, they would find it too cumbersome to carry always a supply of salt with them.

"The preparation of the aloë, also called mescale or mezcal by the Spaniards, requires more time and labor. The roots, after being properly separated from the plants, are roasted for some hours in a strong fire, and then buried, twelve or twenty together, in the ground, and well covered with hot stones, hot ashes, and earth. In this state they have to remain for twelve or fourteen hours, and when dug out again they are of a fine yellow color, and perfectly tender, making a very palatable dish, which has served me frequently as food when I had nothing else to eat, or as dessert after dinner in lieu of fruit. But they act at first as a purgative on persons who are not accustomed to them, and leave the throat somewhat rough for a few hours afterwards.

"To light a fire the Californians make no use of steel and flint, but obtain it by the friction of two pieces of wood. One of them is cylindrical, and pointed on one end, which fits into a round cavity in the other, and by turning the cylindrical piece with great rapidity between their hands, like a twirling stick, they succeed in igniting the lower piece if they continue the process for a sufficient length of time.

"The Californians have no fixed time for any sort of business, and eat, consequently, whenever they have anything, or feel inclined to do so, which is nearly always the case. I never asked one of them whether he was hungry who failed to answer in the affirmative, even if his appearance indicated the contrary. A meal in the middle of the day is the least in use among them, because they all set out early in the morning for their foraging expeditions, and return only in the evening to the place from which they started, if they do not choose some other locality for their night quarters. The day being thus spent in running about and searching for food, they have no time left for preparing a dinner at noon. They start always empty-handed; for if perchance something remains from their evening repasts they certainly eat it during the night in waking moments or on the following morning before leaving. The Californians can endure hunger easier and much longer than other people; whereas they will eat enormously if a chance is given. I often tried to buy a piece of venison from them when the skin had but lately been stripped off the deer, but regularly received the answer that nothing was left; and I knew well enough that the hunter who killed the animal needed no assistance

262 by faith and attendant ceremony; for the doubly consumed food is
514 credited with intensified powers and virtues, and held to be specially
potent in the relief of hunger and in giving endurance for the hard
warpath or prolonged chase; it is—and makes—very strong ("mucho
fuerte"), in the laconic and confident explanation of Mashém. Incongruous as the custom is to higher culture, it finds natural suggestion
in the everyday habits of the tribe, who are wonted not only to the
eating of animal entrails in raw and uncleaned condition, but especially
to the relief of the sharpest pangs of hunger by means of the soft
structures and their semiassimilated contents—an association of much
influence in primitive thought. Concordantly with the custom and the
faith grown out of it, the excreta in general take a prominent place
in the Seri mind; the use of urine in ablution, etc, is little understood
and may be passed over; but all bony *feces*—and it may be noted that
the "sign" of the Seri more resembles that of wolves or snake-eating
swine than that of men—following gorges of large quarry are customarily located and kept in mind for recourse in time of ensuing shortage,
when the mass is ground on the shat and reconsumed; and even the
ordinary discharge is preserved during the seasons of less reliable
514 food-supply.

There is an obscure connection between this curious and repulsive
764 food custom of the Seri and the mortuary customs of the tribe, which

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000 to finish it. Twenty-four pounds of meat in twenty-four hours is not deemed an extraordinary ration for a single person, and to see anything eatable before him is a temptation for a Californian which he cannot resist; and not to make away with it before night would be a victory he is very seldom capable of gaining over himself."

Clavigero's account of the food-habits of the California Indians is similar, though generally less explicit. According to him the seeds forming the "second harvest of pitahayas" are extracted carefully while fresh, and are afterward roasted, ground, and preserved in the form of meal against the coming winter. Of the reswallowing habit, he says:

"The savages living in the northern part of the peninsula have found the secret, unknown to mortals in general, to eat and re-eat the same meal repeatedly. They tie a string around a mouthful of meat dried and hardened in the sun. *After* chewing it for a while they swallow it, leaving the string hanging from the mouth. *After* two or three minutes, by means of the string they draw the meat up again to be rechewed, and this they repeat as many times as may be necessary until the morsel is consumed or so softened that the string will not hold it any longer. In extracting it from the throat they make such a noise that to one who has not before heard it it appears that they are choking themselves.

"When many individuals are gathered together to eat in this manner it is practiced with more ceremony. They seat themselves on the ground, forming a circle of eight or ten persons. One of them takes the mouthful and swallows it, and afterwards draws it up again and passes it to the next one, and this one to another, proceeding thus around the circle with much enjoyment until the morsel is consumed. This has astonished the Spaniards who have seen it, and indeed it would not be credible if it had not been unanimously testified to by all who have been in that country. Several Jesuits who did not believe this, notwithstanding that sincere and prominent persons confirmed it, having afterwards gone to California saw it with their own eyes. Among those Indians who have embraced Christianity this loathsome and dangerous method of eating has been abandoned in consequence of the continual reproofs of the missionaries." (Historia de la Antigua ó Baja California, obra postuma del Padre Francisco Javier Clavijero; Mexico, 1852, p. 24.)

171 The records of Clavigero and Baegert indicate fair correspondence in the food habits of the California Indians and the Seri, though there are certain noteworthy differences, e. g., the tabu of the badger
262 among the former and of the ground squirrel among the latter; it would also appear that the Californians were the more largely vegetarian and the better advanced in culinary processes. The customs of the Seri throw light on the genesis of "re-eating", for the process would appear to be but an extension of the repeated mouthing and swallowing of tendinous strings still attached to the bones of larger animals.

514 764 was not detected until the opportunity for personal inquiry had gone by. About the rancherias on Isla Tiburon, and especially about the extensive house-group at the base of Punta Tormenta, there are burial places marked by cairns of cobbles, or by heaps of thorny brambles where cobbles are not accessible; and most of these cairns and bramble-piles are supplemented by hoards of desiccated feces carefully stored in shells, usually of *Arca* (a typical specimen is illustrated in figure 25). The hoards range from 50 to 500 shells in quantity, and there were fully a score of them at Punta Tormenta alone. About the newer rancherias, as at Rada Ballena, where there are no cemeteries, the hoards are simply piled about small clumps of shrubbery. The meaning of the association of the dietetic residua and death in the Seri mind is not wholly clear; yet the connection between the "strong food" for the warpath and the mystical food for the manes in the long journey to the hereafter is close enough to give some inkling of the meaning.[1]

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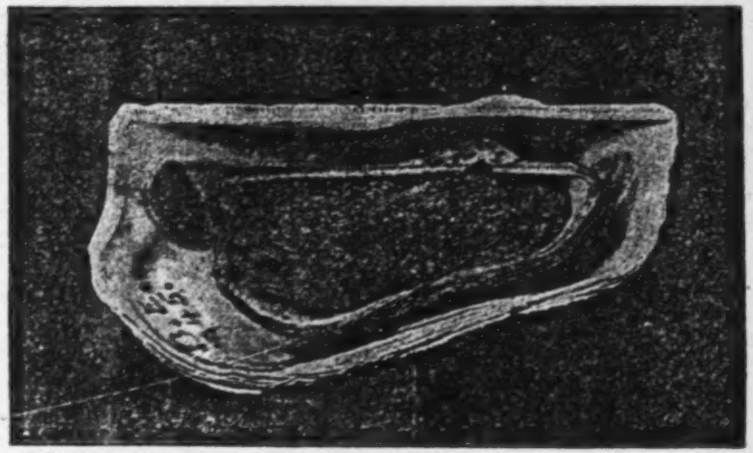

FIG. 25—Scatophagic supplies.

262 In recapitulating the food supplies of the Seri it is not without interest to estimate roughly the relative quantities of the several constituents consumed; and the proportions may be made the more readily comprehensible by expression in absolute terms. As a basis for the quantitative estimate, it may be assumed that the average Seri, living, as he does, a vigorous outdoor life, consuming, as he does, a diet of less average nutrition than the selected and cooked foods of higher culture, and attaining, as he does, an exceptional stature and strength, eats something more than the average ration; so that his ration of solid food may be lumped at 2.75 pounds (about 1,250 grams) daily, or 1,000

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[1] Cf. Scatalogic Rites of all Nations, by Captain John G. Bourke, 1891, especially chapter ii, pp. [illegible]. The Seri custom, resting as it does on an evident economic basis, tends to explain the scatophagy of the Hopi and other tribes described by Bourke.

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pounds (about 455 kilograms) yearly. The aggregate diet of the tribe may be estimated also by assuming the population to comprise 300 full eaters, besides, say, 50 nurslings negligible in the computation; so that the annual consumption of the tribe may be reckoned at 300,000 pounds (136,000 kilograms), or 150 tons, of solid food. Accordingly the several constituents may be estimated, as shown in the accompanying table, in percentages of the total, in pounds aggregate and apiece for the eaters, and (so far as practicable) in units both aggregate and apiece; the weights of units being roughly averaged at 100 pounds (45 kilograms) for turtles, 12½ pounds (5.6 kilograms) for large land game, 450 pounds (about 200 kilograms) for stock, and 2 ounces (56.7 grams) for tunas.

Estimated annual dietary of the Seri tribe

Constituents	Per cent	Quantity		Units	
		Aggregate	Apiece	Aggregate	Apiece
		Pounds	*Pounds*		
Turtles	25	75,000	250	750	2½
Pelicans	5	15,000	50	1,200	4
Other water-fowl and eggs	8	24,000	80	....	....
Fish	15	45,000	150	....	....
Shellfish (except turtles)	10	30,000	100	....	....
Large land game	7	21,000	70	280	1
Other land game	8	24,000	80	....	....
Stock	6	18,000	60	40	2/15
Tunas	9	27,000	90	216,000	720
Other vegetals	5	15,000	50	....	....
Miscellaneous	2	6,000	20	....	....
Total	100	300,000	1,000	....	....

Of course the constituents vary with temporary conditions; during "The Time of the Big Fish", practically all other sources of food were neglected until the providential supply was exhausted; during the decades of main subsistence on stolen stock it is probable that the consumption of other constituents, perhaps excepting the tunas, was proportionately reduced; and it is not improbable that during the warfare between Seri and Tepoka, described by Hardy, the consumption of turtles was materially diminished. Judging from the direct and indirect data and from [illegible] analogies, the least variable constituent is the cactus fruit, which probably fails but rarely and is so easily harvested as practically to supplant all other supplies during its season of a month or more. At the best, too, the quantitative estimates are nothing more than necessarily arbitrary approximations, based on incomplete inquiries and observations;[1] yet they are better than no estimates at all, and

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[1] About 200 turtle-shells were noticed about the rancherias at Punta Tormenta and Rada Ballena alone in 1895, all being less than two years old, as judged from the degree of weathering.

appear to form a fairly trustworthy basis for consideration of the Seri 262
food habits.

On reviewing the constituents it would appear that the Seri must be regarded as essentially a maritime people, in that about two-thirds of their food is derived from the sea; also that they must be deemed essentially carnivorous, since fully five-sixths of their diet (84 per cent plus a share of the miscellaneous—chiefly scatophagous—category) is animal. The tabulation does not show the relative proportions of the several constituents cooked and eaten raw, but the best available data indicate that fully three-fourths of the ordinary dietary, both animal and vegetal, is ingested in raw condition, and that the greater part of the remaining fourth is imperfectly cooked.

In recapitulating the devices for food-getting, it is found that nearly 182
all of the more distinctive artifacts and crafts are either directly or indirectly connected with that primary activity of living things, food-conquest. Foremost among the distinctive artifacts of the Seri, in its relation to daily life and in its technical perfection, is the canteen-olla; probably second in importance, and also in technical perfection, is the balsa—whose functions, however, extend beyond simple food-getting; next comes the crude and simple, yet economically perfected, turtle-harpoon, with its variants in the form of arrow (with a function in warfare as well as in food-getting) and fire-drill; while the light basket-tray, although capable of carrying ten to twenty-five times its own weight, is perhaps the least perfect technically of the artifacts directly connected with sustentation. And it should be noted that the prevailing tools—hupf, ahst, multifunctional shell, and awl of mandible or bone or tooth—have either an immediate or a secondary connection with food-getting.

NAVIGATION

At first sight Seriland seems an abnormal habitat for a primitive 131
people, since its land area is cleft in twain by a stormy strait—a strait whose terrors to the few Caucasian navigators who have reached its swirling currents are indicated by their appellations, "El Canal Peligroso de San Miguel"[1] and "El Infiernillo"; for such a stretch of troubled water is commonly a more serious bar to travel than any moderate land expanse. This intuitive notion of the effectiveness of a water barrier, and the correlative feeling of the incongruity of a land barrier insuperable for centuries, is well illustrated by prevailing opinion throughout northwestern Mexico; for it is commonly supposed in Sonora and neighboring states that Seriland is conterminous with Isla Tiburon, i. e., that the mainland portion of the province (including Sierra Seri with its flanking footslopes) lies beyond the diabolic channel. Yet longer scrutiny shows that the superficial impression merely mirrors Caucasian thought and fails to touch the essential conditions,

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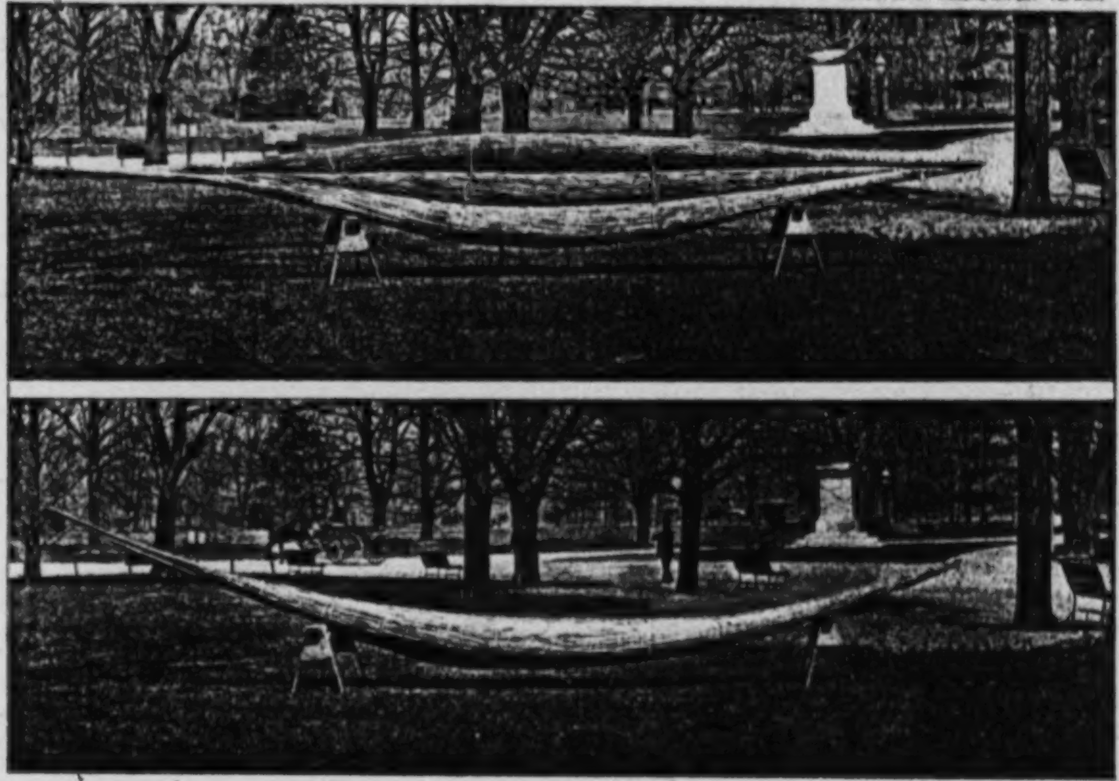
[1] Hardy, Travels, p. 291.

131 especially as they are reflected in the primitive minds of the local tribe; and careful study of the habits and history of the Seri shows that the dangerous strait has been a potent factor in preserving tribal existence and perpetuating tribal integrity. Naturally the factor operates through
502 navigation; for it is by means of this art that the tribesmen are able to
609 avoid or to repel the rare invaders of either mainland or insular portions of their province, the overland pioneers from the east being stopped by the strait and the maritime explorers from south and west being unable to maintain themselves long about the stormy shores and never outfitted for pushing far toward the mainland retreats and strongholds; while by means of their light and simple craft the Seri were able to retreat or to advance across the strait as readily as over the adjacent lands to which they were wonted by the experience of generations. In their minds, indeed, El Infiernillo is the nucleus of their province. So the Seri were among the lowliest learners of that lesson of highest statecraft, that lands are not divided but united by intervening sea; and their ill-formulated and provincial notions are of much significance in their bearing on autochthonous habits and habitats.

The water craft of which the Seri make so good use is a balsa, made
501 of three bundles of carrizal or cane lashed together alongside, measuring barely 4 feet abeam, 1½ feet in depth, and some 30 feet in length over all. A fine specimen (except for a slight injury at one end) is shown in plan and profile in plate XXXI. It was obtained near Boca Infierno in 1895, partly towed and partly paddled thence to Embarcadero Andrade, wagoned laboriously across Desierto Encinas and on to Hermosillo, conveyed in an iron-sheathed box on two gondolas of the narrow-gage Ferrocarril de Sonora to the international frontier, and finally freighted to the United States National Museum, where (in the Mall just outside the building) the photographs reproduced in the plate were taken.

The manufacture of the balsa has never been seen by Caucasian eyes,
396 but the processes are safely inferred from the structure, whose testimony is corroborated in part by Mashém's imperfect descriptions. The first step is the gathering of the carrizal from one of the patches growing about the three or four permanent fresh waters of Seriland, the canes being carefully selected for straightness, symmetry, and uniformity in size; these are then denuded of leaves and tassels, tied in bundles of convenient size (one seen on Tiburon contained 40 or 50 canes), and carried to the shore. In actual construction the canes are laid butt to butt, but overlapping 2 or 3 feet, the overlap being shifted this way and that with successive additions, so that the aggregate length of overlapping in the bundle reaches 10 or 12 feet—i. e., the full length of the body of the finished craft. The growing bundle is wrapped from time to time with lashings of mesquite root or maguey fiber, and kept in cylindrical form by constant rolling and by means of the lashing; though the cord used for the purpose is so slender as to do little more than serve the purposes

[FACING p.214]



SERI BALSA IN THE NATIONAL MUSEUM

396 of manufacture (only stray shreds of the interior cording could be found in an old and abandoned balsa on Punta Antigualla). As the bundle approaches the requisite size, the building process changes; the butts of the successively added stalks are thrust obliquely into the interstices extending beyond the butts of earlier-used canes, and the stems are slightly bent to bring them into parallelism with their fellows; and this interweaving process is continued with increasing care until, when the bundle is completed, there are no visible butts (all being pushed into the interior of the bundle), while the only visible tips are those projecting to form the tapering extremities. The finished bundle is then secured by a spiral winding of slender cord. Two other bundles are next made, the three being entirely similar, so far as is known; then the three are joined by a lashing of slender cord like that used for the separate bundles, which is twined alternately above and below the central bundle in such manner as to hold the three in an approximate plane save toward the extremities, where the lashing is much firmer and the tapering tips of the bundles are brought into a triangular position, i. e., the position of smallest compass. The cordage is of either mesquite root or maguey fiber, the former being the more common, so far as observed (doubtless by reason of the dearth of the latter plant); it is notably uniform in twist and size, though surprisingly slender for the purpose, barely three-sixteenths of an inch, or 5 mm., in diameter, and limited in quantity.[1] The only tools [412] or implements used in the manufacture (and repair), so far as is known, are light wooden marlinspikes, two of which are illustrated in figure 26; these are used in working the cane-butts into the bundles. In collecting the canes the tassels are broken off and the leaves stripped by the unaided hands, while the stalks are broken off usually below the secondary roots in the downward taper, and the rootlets and loose ends are removed either with the hands or by fire.

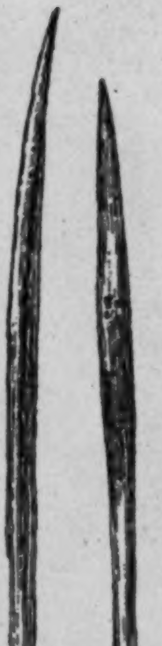


FIG. 26—Seri marlinspikes.

501 The finished balsa is notably light and buoyant. The Boca Infierno specimen was estimated to weigh about 250 pounds (113 kilograms) when thoroughly dry, and little more than 300 pounds (126 kilograms)

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[1] Only the finer cording shown in plate xxxi is original, the coarser ropes having been added to facilitate handling.

501 when completely wet; so that it could easily be picked up by three or four, or even by two, strong men and carried ashore to be hidden in the fog-shrubbery skirting the coast. The craft floated high with one man aboard, rode better with two, carried three without much difficulty even in a fairly heavy sea, and would safely bear four adults aggregating 600 pounds (272 kilograms) in moderate water. The most striking features of the craft afloat are its graceful movement and its perfect adaptation to variable seas and loads. The lines are symmetric and of great delicacy, as indicated even by the photographs out of its element; the reed-bundles are yielding, partly by resilience and partly in the way of set, so that the body of the craft curves to fit the weight and distribution of the load and to meet the impact of swells and breakers. In smooth water a lightly laden balsa may appear heavy and logy, but with a heavier load and stronger sea each tapering end rises strongly and then recurves slightly in a Hogarthian line graceful as the neck of a swan, while the whole craft skims the waves or glides sinuously over their crests in a lightsome way, recalling the easy movement of gull or petrel. A suggestion of its effect is shown in figure 27, a composite drawn largely from photographs; another suggestion is shown in figure 28, reproduced in facsimile from a drawing by the artist of the U. S. S. *Narragansett* in 1873,[1] the only known picture of the craft antecedent to the 1895 expedition.

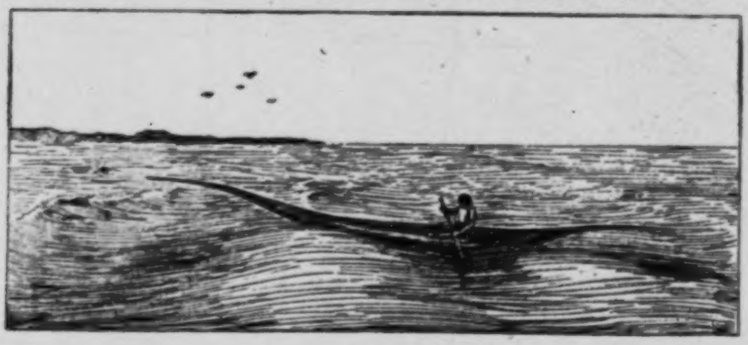

FIG. 27—The balsa afloat.

Almost equally striking features of the balsa are its efficiency and safety under the severe local conditions. Carrying twice its weight of (chiefly) living freight, it breasts gales and rides breakers and stems tiderips that would crush a canoe, swamp a skiff, or capsize a yawl; while if caught in currents or surf and cast ashore it is seldom wrecked, but drops lightly on beach or rocks, to be pushed uninjured by the broken wave-tips beyond the reach of pounding rollers, even if it is not at once caught up by its passengers and carried to complete safety. The strength of the craft is amazing, especially in view of the slenderness of the cords used in construction; in fact, the outer layers of canes 501 are so ingeniously interlocked by the insertion of their butts into interstices that each bundle holds itself together with slight aid from the exterior cording, while even the bundles themselves are held in proper relative position by the secure terminal tying rather than by the intertwined cording of the body of the craft. And the entire construction exemplifies the compartment principle to perfection; a slight injury may affect but a single joint of one out of several thousand canes, while even a severe fall on sharp rocks seldom injures more than a few score canes, and these in a few joints only. The most objectionable feature of the balsa lies in the fact that it affords little protection from the wet. The water rises freely through the reed bundles to a height depending on the load, and not only the spray but the whitecaps and combers as well dash freely over the unprotected body of the craft; but this defect is of little consequence to the hardy and nearly nude navigators, or to their scanty and practically uninjurable freight.

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[1] Publication No. [illegible], U. S. Hydrographic Office, Bureau of Navigation, [illegible], plate XV, p. 128.

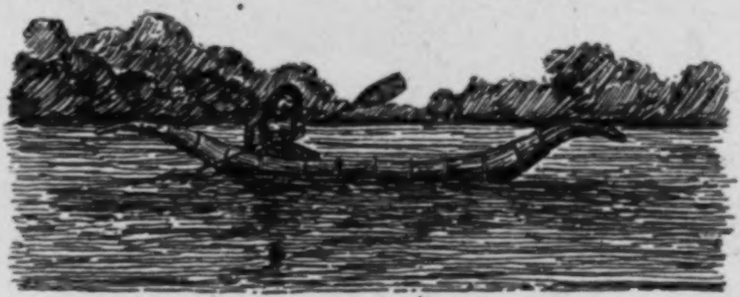

FIG. 29—Seri balsa as seen by *Narragansett* party.

The gracefulness and efficiency of the balsa itself stand in strong 502 contrast with the crude methods of propulsion. According to Mashém, the craft is commonly propelled by either one or two women lying [462] prone on the reeds and paddling either with bare hands or with large shells held in the hands; according to Hardy, the harpoon main shaft is used by turtle fishermen for paddling (and probably for poling, also); according to the Dewey picture (figure 28), the vessel is driven by a woman with a double-end paddle like that used in connection with the conventional canoe; while the expedition of 1895 found on Isla Tiburon four or five paddles rudely wrought from flotsam boards and barrel-staves, and partly hafted with rough sticks 3 or 4 feet long, but partly without handles and evidently designed to be grasped directly, like the shells of Mashém's descriptions. No trace of oars, rowlocks, sculls, rudders, or masts were found, and there is nothing to indicate the faintest notion of sails and sailing. On the whole there is no trace of well differentiated propelling devices—i. e., the craft is perfected only as a static device and not at all as a dynamic mechanism.

22 502 Despite their poverty in propelling devices, the Seri navigate their waters successfully and extensively. Perhaps the commonest function of the craft is that exercised in connection with the turtle fishery, though its chief office as a factor of general industrial economy is that of bridging El Infernillo at the will of the roving clans. It is by means of this craft, also, that the semiceremonial pelican feasts on Tiburon are consummated; it is by the same means that Isla Patos, Isla Turner, Roca Foca, and other insulated sources of food-supply are habitually reached; and both Mashém's accounts and the Jesuits' records indicate that occasional voyages are pushed to San Esteban, San Lorenzo, Angel de la Guarda, and even to the Baja California coast.

Concordantly with the tribal customs, little freight is carried. The traveling family transport their poor possessions to the shore, bring out the balsa from its hiding place in the thick and thorny fog-shrubbery, launch it, lade it with a filled olla and the weapons of a man and implements of a woman, besides any chance food and clothing, and embark lightly to enjoy the semirepose of drifting before the breeze—until the rising gale brings labor still more arduous than that of scouring the spall-strewn slopes or sandy stretches of their hard motherland. Commonly the terminus of the trip is fixed largely by the chance of wind and tide; and when it is reached the party carry the craft inshore, conceal it shrewdly, and then take up their birdskin bed and walk forth in search of fresh water and meat. The successful fishing trips of course end in orgies of gorging, and when the voyage is the climax of a foray to the mainland frontier for stock-stealing, the quarters and paunches and heads hastily thrown aboard at the mainland side of the strait are carried to the rancherias for consumption at leisure; and this has happened so often that equine hoofs and bovine bones are common constituents of the middens on Tiburon.

171 501 Although measurably similar to Central American and South American types of water-craft, the Seri balsa is a notably distinct type for its region. The California natives, as well as those of the mainland of Mexico south of Rio Yaqui, used rafts made either of palm trunks or of other logs lashed alongside rather than balsas; while the far-traveling tribes used either sails or well-differentiated paddles for propulsion.

501 Briefly, the Seri balsa is remarkable for perfect adaptation to those needs of its makers shaped by their distinctive environment. It seems to approach the ideal of industrial economy—the acme of practicality—in the adjustment of materials and forces to the ends of a lowly culture; and, like the olla and harpoon and arrow, it affords an impressive example of the adjustment of artifacts to environment through the intervention of budding intelligence. Yet the chief significance of the craft would seem to reside in its vestigial character as a survival of that orarian stage in the course of human development

in which men lived alongshore and adjusted themselves to maritime 501
conditions rather than to terrestrial environments; a stage evidently
but barely passed by the Seri, since they still subsist mainly on sea
food, still retain their suggestive navigation, and still view their stormy
straits and bays as the nucleus and noblest portion of their province.

HABITATIONS

Among the Seri, as among primitive folk generally, the habitation 182
reflects local conditions, especially climate and building materials.
Now, Seriland is a subtropical yet arid tract, where rain rarely falls, 342
frost seldom forms, and snow is known only as a fleeting mantle on generally distant mountains, so that there is little need for protection from cold and wet; at the same time the district is too desert to yield serviceable building material other than rock, which the lowly folk have not learned to manipulate. Moreover, the tribesmen and their families are perpetual fugitives (their movements being too erratic and aimless to put them in the class of nomads); they are too accustomed to wandering and too unaccustomed to long resting at particular spots to have a home-sense, save for their motherland as a whole; and, just as they rely on their own physical hardihood for preservation against the elements, so they depend on their combined fleetness and prowess for preservation against enemies. Accordingly, the Seri habitation is not a permanent abode, still less a domicile for weaklings or a shrine for household lares and penates, not at all a castle of proprietary sanctity, and least of all a home; it is rather a time-serving lair than a house in ordinary meaning.

Despite the poverty of the material and the squalor of the structure, 342
certain features of the Seri jacal are notably uniform and conventional. In size and form it recalls the passing "prairie schooner", or covered wagon; it is some 10 or 12 feet long, half as wide measured on the ground, and about 4½ feet high, with one end (the front) open to the full width and height, and the other nearly or quite closed. The conventional structural features comprise the upright bows and horizontal tie-sticks forming the framework. The bows are made of okatilla stems (*Fouquiera splendens*) roughly denuded of their thorns; each is formed by thrusting the butts of two such stems (or more if they are slender) into the ground at the requisite distance apart, bending the tops together into an overlap of a yard or two, and securing them partly by intertwisting, partly by any convenient lashing; and about five or six such bows suffice for a jacal (the appearance of the bows is fairly represented by the ruin shown in plate VII). Next come the tie-sticks, which consist of any convenient material (okatilla stems, cane-stalks, paloblanco branches, mesquite roots, saguaro ribs, etc.), and are lashed to the butts by means of withes, splints, or fiber wisps, at a height of some 4 feet above the ground, or about where the walls merge into the roof. With the placing of these sticks the conventional part

342 of the building process may be said to end; for up to this point the process is a collective one and the materials are essentially uniform, while thereafter the completion of the work depends largely on individual or family caprice, and the materials are selected at random. Moreover, the framework is fairly permanent, usually surviving a number of occupancies extending over months or years, and outlasting an equal number of outer coverings; so that all habitable Seriland is dotted sparsely with jacal skeletons, sometimes retaining fragments of walls or roof, but oftener entirely denuded.

The conversion of the framework into a habitable jacal is effected by piling around and over it any convenient shrubbery, by which it is made a sort of bower; sometimes the conversion is aided by the attachment of additional tie-sticks both above and below the main horizontal pieces, as illustrated in the upper figure of plate IX; sometimes, too, the material of walls and roof is carefully selected and interwoven with such pains as to form a rude thatch, as in the chief jacal at Rada Ballena (the upper figure in plate VI); but more commonly the covering is collected at random and is laid so loosely that it is held in place only by gravity and wind pressure, and may be dislodged by a change of wind. Ordinarily the walls are thicker and denser than the roofs, which are supplemented in time of occupancy by haunches of venison, remnantal quarters of cattle and horses, half-eaten turtles, hides and pelts, as well as bird-skin robes, thrown on the bows partly to keep them out of reach of coyotes and partly to afford shade. Most of the jacales about the old rancheria at Punta Tormenta (abandoned at "The Time of the Big Fish"), which may be regarded as the center of the turtle industry, are irregularly clapboarded with turtle-shells and with sheets of a local sponge, as illustrated in plate VII. This sponge abounds in the bight of Rada Ballena, where at high water it spreads over the silty bottom in a slimy sheet, and at low water with off-shore gales is left by the waters to dry into a light and fairly tenacious mat, which is gathered in sheets for bedding as well as for house making material (a specimen of the sponge—probably *Chalina*—is shown on larger scale in plate VIII). On the frontier the jacales may be modified by the introduction of sawed or riven lumber, as illustrated by some of the structures at Costa Rica (shown in plate XI); but even here there is a strong disposition to adhere to the customary form, and especially to the conventional framework, as indicated by the example in plate X.

While the jacales are not consistently oriented, they reveal a primary
361 preference for facing away from the prevailing wind and toward the nearest sea, with a secondary preference for southern and eastern exposures—the former preference being easily explained, since a gale from the front quickly strips walls and roof and scatters the materials afar. No definite order is observed in the placement of the several jacales in the larger rancherias; apparently the first is located at the choice of the leading elderwoman, and the others are clustered about it at the com-

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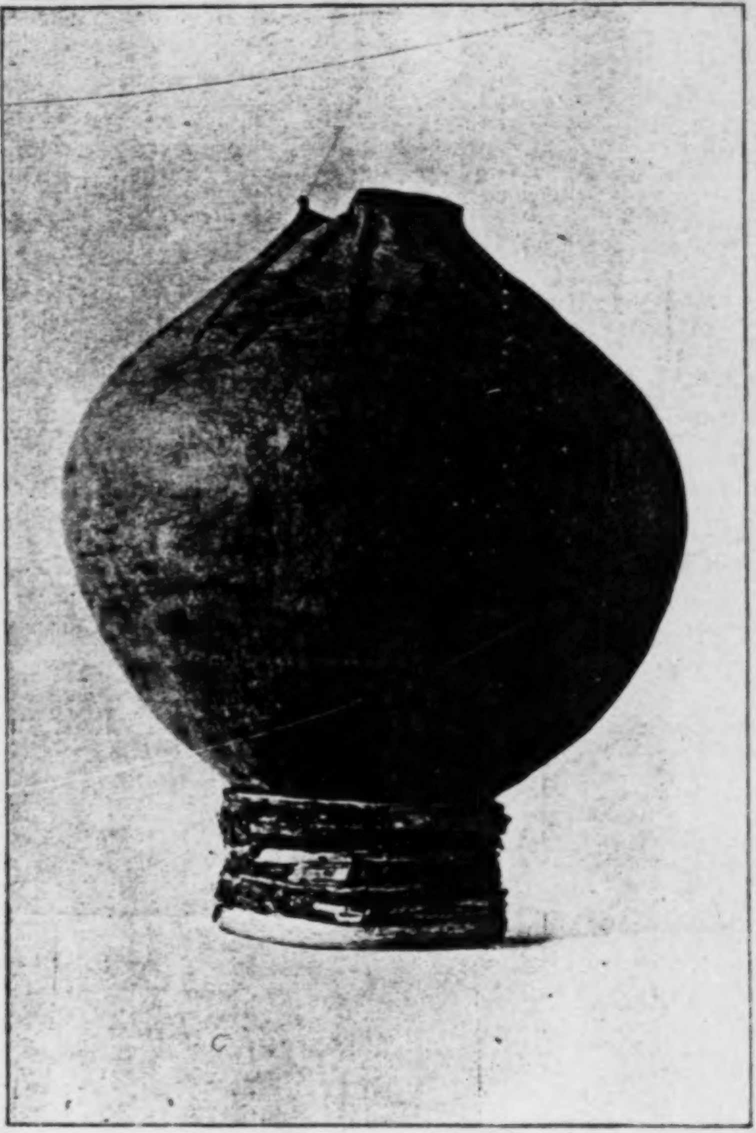

PAINTED OLLA, WITH OLLA RING

[p. 222 A]

mon convenience. Usually the several jacales are entirely separate; 361
but at Punta Tormenta, Punta Narragansett, and still more notably at
Rada Ballena, individual huts were found either extended to double [342]
length or joined obliquely in such wise as to show two fronts (as illustrated
in plate vi). The conventional frameworks appear to be common 423
tribal property, at least to the extent that an abandoned skeleton may
be preempted by any comer; while the addition of walls and roof appears
to afford a prescriptive proprietary right to the elderwoman and family
by whom the work is done—though the right seems to hold only during
occupancy, or until the temporary covering is dislodged.

The jacales are without semblance of furnishing, beyond an occasional 352
shet and a few loose pebbles used as hupfs; though the nooks
behind the bows and tie-sticks sometimes serve as places of concealment
for paint-cups, awls, hair bobbins, and other domestic trifles.
There is no floor but earth, and this remains in natural condition, [342]
except for trampling and wearing into wallows, recalling those of fowls
and swine, which afford a rough measure of the periods of occupancy;
there is no fireplace—indeed, fires are rarely made in the jacales, nor
for that matter frequently anywhere; and there are no fixed places for
bedding, water ollas, or other portable possessions, none of which are
left behind when the householders are abroad.

Little is known of the actual process of jacal building, especially in 342
Seriland proper; but the observations of Señor Encinas and his
vaqueros on the frontier corroborate Mashém's statements that the 462
houses are built by (and belong to) the matrons; that several women [423]
customarily cooperate in the collection of the okatilla and erection of
the framework; that the only tools used in the processes are hupfs
and miscellaneous sticks; and that the placing and fitting of the beams
and tie-sticks are accompanied by a chant, usually led by the eldest
matron of the group. The same informants support the ready inference
from the structure that the shrubbery and other material forming
walls and roofs are gathered and placed from time to time by the
women occupying the jacales.

182
The Seri building chant is suggestive. Neither Señor Encinas nor 342
Mashém regarded it as religious or even ritualistic, but merely as a 553
work-song designed (in the naive notion of the latter) to make the task
lighter; and it seems probable that the local interpretation is correct.
If so, the simple chant at once offers rational explanation for its own
existence, and opens the way to explanation of the elaborate building
rituals of more advanced tribes. The work-song is a common device in
many lowly activities, ranging from those of children at play to those
of sailors at the windlass, and undoubtedly serves a useful purpose in
guiding, coordinating, and concentrating effort; to some extent the
vocal accompaniment to the manual or bodily action apparently
expresses that normal interrelation of functions manifested by second-

182 ary sense-effects (as when the sense of smell is intensified by exercise
of the organs of taste), or, in another direction, by the habit of the
342 youthful penman who shapes his letters by aid of lingual and facial
533 contortion; yet it is a characteristic of primitive life—one doubtless due to the interrelations of psycho-physical functions—to not only employ but to greatly exalt vocal formulas associated with manual activities, so that words, and eventually *the* Word, acquires a mystical or talismanic or sacred significance pervading all lower culture—indeed the savage shaman is unable to work his marvels without mumbled incantations ending in some formulated and well-understood utterance, and his practice persists in the meaningless mummery and culminating "presto" of modern jugglery. So, viewed in the light of psycho-physical causes and prevalent customs connected with vocal formulas, it would seem probable that the conventional features of the Seri jacales are crystallized in the tribal lore quite as effectually through the associated work-chants as through direct memory of the forms and structures themselves. And the simple runes chanted in unison by Seri matrons engaged in bending and lashing their okatilla house-bows apparently define a nascent stage in the development of the elaborate fiducial house-building ceremonies characteristic of various higher tribes; for the spontaneous vocal accompaniment tends naturally to run into ritual under that law of the development of myth or fable which explains so many of the customs and notions of primitive peoples.[1]

APPARELING

Slightly as they have been affected by three centuries of sporadic
177 contact with higher culture, the Seri reveal many marks of accultura-
291 tion; and the most conspicuous of these are connected with clothing, especially on the frontier, where women and even warriors habitually wear a livery of subserviency in the form of cast-off Caucasian rags (as illustrated in most of the photographs taken at Costa Rica). Even in the depths of Seriland the native fabrics are largely replaced by white men's stuffs, obtained by barter, beggary, and robbery; yet it is easy to distinguish the harlequin veneer of borrowed trappings from the few fixed types of covering that seem characteristic.

The most distinctive piece of apparel is a kilt, extending from waist to knees, worn alike by men and women and the larger children. Aboriginally it was either a birdskin robe or a rectangle of coarse textile fabric, secured at the waist by a hair-cord belt; acculturally it is usually a rectangle of manta (coarse sheeting) or other stuff, preferably cotton or linen but sometimes woolen, fastened either by tucking in the corners or by a belt of cord. Good specimens of the accultural cloth kilt worn by men and larger boys are illustrated in plates XVI and XIX; the birdskin kilt (put on for the purpose) is illustrated in 291 plate XVIII, while the aboriginal fabric is fairly represented in plate XXIX. [177] Although ordinarily worn as a kilt, the same article (temporarily replaced by an improvised substitute) serves other purposes at the convenience of the wearer; in the chase for tunas and for moving game [482] it becomes a bag or pack-sheet; in case of cold rain it is shifted to the shoulders or the exposed side; during the siesta it is elevated on a shrub and a stick to serve as a canopy; at sleeping time generally it [513] forms (especially when of birdskin) a bed, i. e., a combined mattress and coverlet; and in attack or defense the pelican skin is at once standard, buckler, and waving capa to confuse quarry or enemy after the manner of the toreador's cloak.

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[1] The law of fable in its relation to primitive surgery is formulated in the Sixteenth Ann. Rep. Bur. Am. Eth., 1897, p. 22.

An almost equally distinctive garment is a short shirt or wammus, with long sleeves, worn by men and women but not by children; ordinarily it covers the thorax, missing connection with the kilt by a few inches, and so affording ventilation and space for suckling the teeming offspring. Unlike the kilt, it is an actual garment, fitted with sleeves and fastened in front with hair-cord strings. Although the Seri wammus corresponds fairly with a Yaqui garment, it seems practically [171] certain that it is of local aboriginal design, and that it was made primitively of haircloth or native textiles (as illustrated in plate XXIX) and worn rather ceremoniously; but latterly it is made of manta and is worn habitually (at least by the women and on the frontier), though [177] cast aside in preparation for any special task or effort—i. e., it is not connected with pudency-sense, save to a slight degree in the younger women. The form, function, and prevalence of the wammus are illustrated by the group shown in plate XIII, in which nearly all of the thirty-odd adults wear the garment.

These two articles constitute the ordinary wearing apparel of the Seri, though they are commonly supplemented (especially when both are of manta) by a pelican-skin robe, which is habitually carried to serve as bed or mackintosh, according to the chance of journey and weather, or as a shield in sudden warfare. No head-covering is used, save in the ceremonial masquerade, when the heads of animals are worn as masks,[1] or in aping Caucasian customs, especially on expeditions for [177] barter (as illustrated in plate XII). Loose trousers of Mexican pattern are sometimes put on at frontier points, but are discarded in Seriland proper, save by Mashém, who maintains prestige partly by this borrowed badge of Caucasian superiority. Leggings and moccasins are eschewed, naturally enough, since they would afford little protection from the sharp spalls and savage thorns of the district, and would give lodgment for the barbed spines inevitably gathered in rapid chase or flight over cactus-dotted stretches; and the only foot-covering seen (save Mashém's boots) was a single sandal made from the rough skin of a turtle-flipper, apparently for ceremonial rather than practical use.

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[1] Hardy (Travels, p. [illegible]) describes the ceremonial wearing of the heads of deer with horns attached.

291 [177] Of all the party at Costa Rica in 1894 subchief Mashém was the only one who wore Caucasian apparel with any air of comfort and fitness; yet even he, with hat and shirt, boots and breeches, and loose bandana about his neck in cowboy style (plate XVII), did not feel fully dressed without the slender hair-cord necklace of his kin in its wonted place. On the frontier improvised fig-leaves were sometimes put on the children of less than a dozen years (as illustrated by the standing infant shown in plate XIV, who was thus dressed hastily for her picture); and a common garb of the smaller children at Costa Rica, as they played about the rancheria or wandered in directions away from the white man's rancho, was limited to a cincture of hair cord or snake skin, or perhaps of agave fiber, under which an improvised kilt might be tucked on the Caucasian's approach.

[412]
[854]

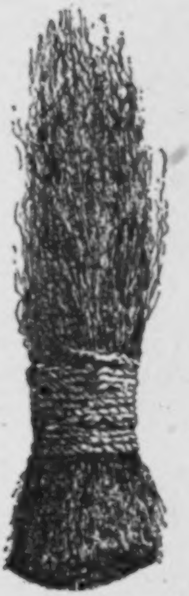


FIG. 29—Seri hairbrush.

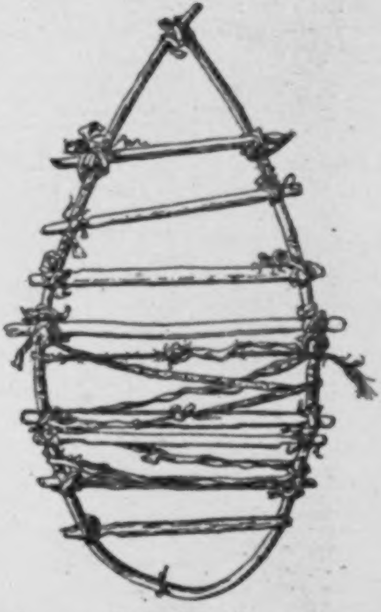
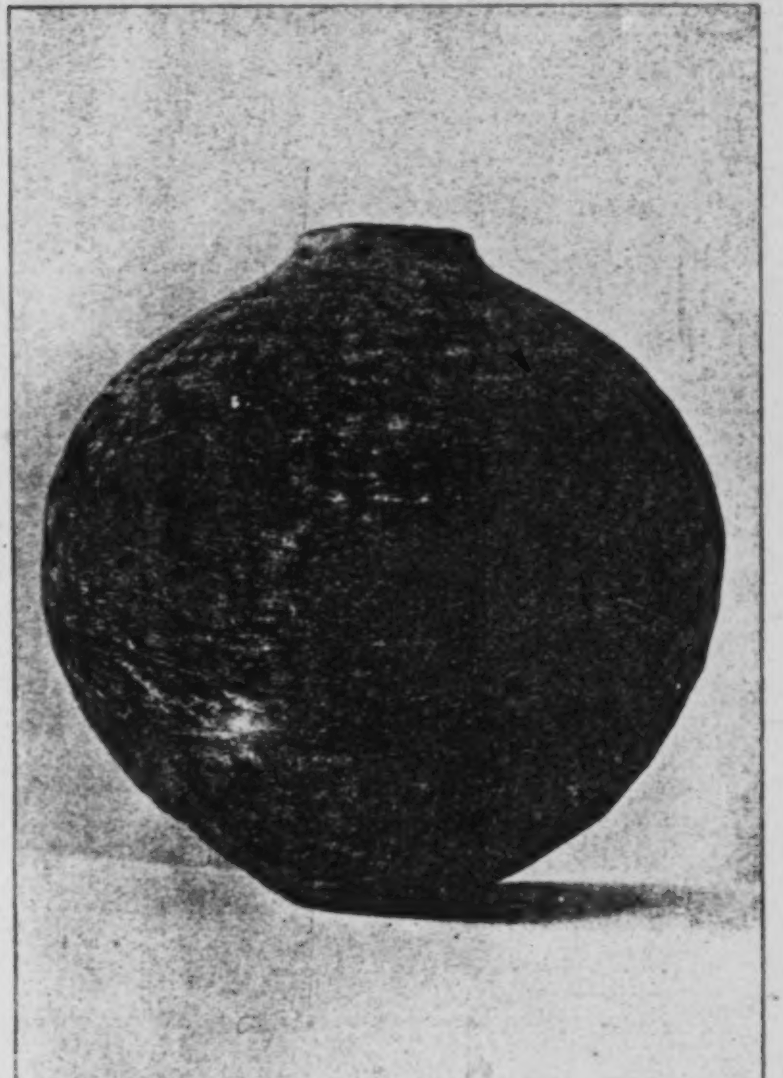


FIG. 30—Seri cradle.

In addition to the individual apparel, each clan, or at least the elder-woman or her fraternal executive, accumulates some surplus material 281 as opportunity offers, and this serves as family bedding until occasion 513 arises for converting it to other uses. Of late the prevailing materials are pelican skins, lightly dressed and joined into robes by sinew stitching; deerskins, dried or partially dressed; cormorant skins, treated like those of the pelican; seal skins, usually fragmentary; peccary skins,



PLAIN OLLA

[p. 226A]

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

281 513 apparently dried without dressing, together with skins of rabbits, mountain sheep, antelope, etc, usually tattered or torn into fragments. Commonly the hides and pelts are nearly or quite in natural condition, retaining the hair, fur, or feathers. The dressing is apparently limited to scratching and gnawing away superfluous flesh, followed by some rubbing and greasing; tanning is apparently unknown. By far the most abundant of the collective possessions are the pelican-skin robes, which form [439] the sole article of recognized barter with aliens. The aggregate stock accumulated at any time is but meager, never too much to be borne on the heads and backs of the clan in case of unexpected decamping.

Aside from the painting paraphernalia, there is 412 302 but a single conspicuous toilet article; this is a hairbrush made of yucca fiber bound into cylindrical form, as illustrated in figure 29. This article is in frequent use; both women and men give much attention to brushing their own long and luxurious locks and cultivating the hair and scalps of their children, the process being regarded as not only directly useful but in some measure sacramental. Ordinarily the hair is parted in the middle and brushed straight, the tresses being permitted to wander at will and never braided or bound or restrained by fillets save in imitation of Caucasian customs on the frontier; though in certain ceremonies the pelage is gathered in a lofty knot on the top-head.[1]

The Seri cradle is merely a bow of paloblanco or 854 other switch with rude cross-sticks lashed on, as shown in figure 30. On this is laid a small pelican-skin robe, with a quantity of pelican down for a diaper, and perhaps a few pelican feathers attached as plumes to wave over the occupant's face; though on the frontier these primitive devices are largely replaced by rags.

Among the important appurtenances of Seri life 283 are the cords used for belts and necklaces, as well as for the attachment of ceremonial headdresses, for converting the kilts into bags, and for numberless minor purposes. The finest of these are made from human hair; and for this purpose the combings are carefully kept, twisted into strands, and wound on thorns or sticks in slender bobbins, such as that illustrated

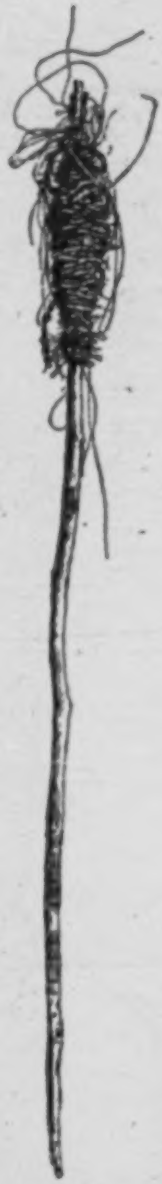


FIG. 31—Hair spindle.

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[1] Cf. Hardy, Travels, p. 290.

233 in figure 31. When the accumulation suffices the strands are doubled or quadrupled, as shown in figures 32 and 33, and the cords are either applied to immediate use or added to the matron's meager store against emergency demands. The cordage used for other purposes than appareling is commonly made from fiber extracted either from the roots of the mesquite or the stipes of the agave; usually it is well twisted and notably

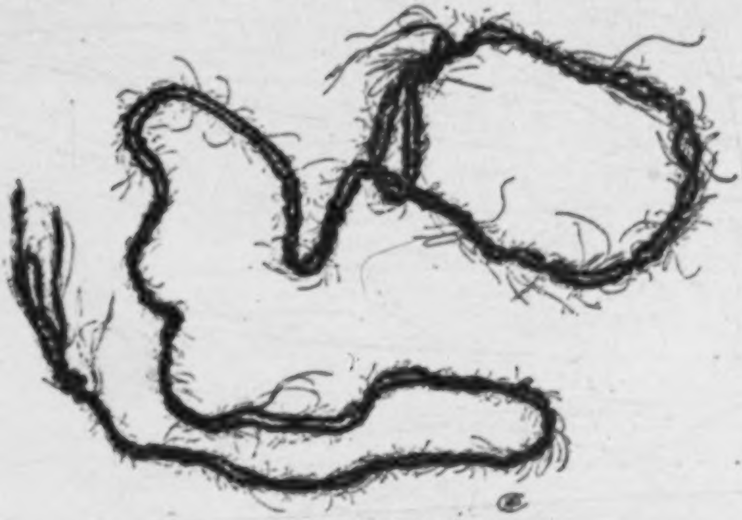

Fig. 32—Human-hair cord.

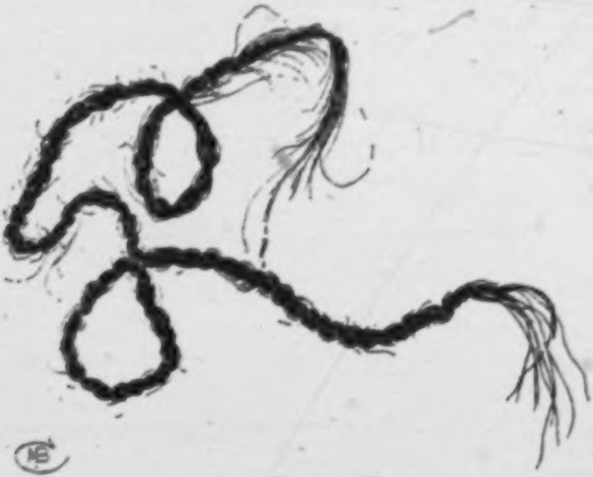

Fig. 33—Horsehair cord.

uniform in size and texture; an inferior example appears in figure 34. The manes and tails of horses and other stock are also converted into cordage, of which the chief known application is in toy riatas. It is of no small significance that the most highly prized cordage material is human hair, and that its chief uses are connected with the person; that the next in order of diminishing preciousness is that derived from the fibrous plants, which is used in balsa-making, bowstrings, harpoon cords, etc, as well as in the native fabrics; and that the least prized material is that derived from imported animals, which is largely limited in its utilization to youthful imitation of Caucasian industries; for the association of material with function reflects a distinctive feature of primitive thought, akin to that displayed in somewhat higher culture as synecdochic magic, the doctrine of signatures, etc.

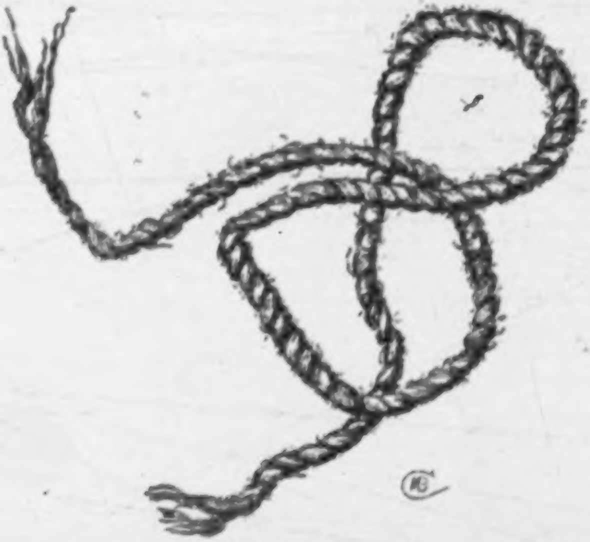

FIG. 34—Mesquite-fiber rope.

Partly because of that decadence of aboriginal devices correlated with acculturation, partly by reason of imperfect observation, practically nothing is known of Seri spinning and weaving, and little of Seri sewing. The religiously-guarded hair-combings are twisted in the fingers and wound on stick-bobbins without aid of mechanical appliances; and, so far as has been observed, the final making of hair cords is merely a continuation of the strictly manual process. The agave stipes and mesquite roots are alleged by vaqueros to be retted in convenient lagoons and barrancas (a statement corroborated by the finding of half a dozen sections of mesquite root soaking in a lagoon near Punta Anti-

283 gualla by the 1895 expedition), and then hatcheled with the hupf or the edge of a shell; when the fibers are gathered in slender wisps or loosely wound coils, both of which were among the possessions of the Seri matrons at Costa Rica in 1894. So far as could be ascertained, the final processes parallel those of hair-cord making, i. e., the fibers are patiently sorted into strands, sized in the fingers and twisted by rolling on the thigh, the strands being subsequently combined in similar fashion.[1] 286 Neither the weaving nor the woven fabrics of the Seri have ever been seen by technologic students so far as known, though the fabrics are shown in Von Bayer's photographs and have been described by various observers. According to Señor Encinas, they resemble coarse bagging, and are woven or netted quite plainly. The ordinary sewing material 412 [237] is sinew, used in connection with a bone awl (a good example of which is illustrated in figure 35), a fish spine or bone, a cactus thorn, or either the mandible of a water-bird or a hard-wood skewer shaped after this natural needle (figure 36 a and b). Sometimes hair or vegetal fiber is substituted for the sinew; and for certain purposes an agave thorn, with the fibers naturally attached, serves for needle and thread.

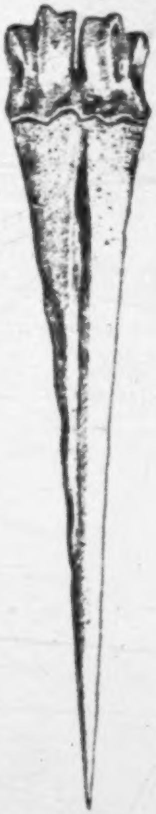

FIG. 35—Bone awl.

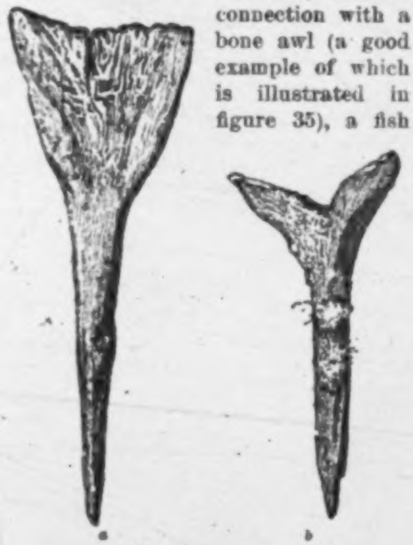

FIG. 36—Wooden awls.

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[524] [1] A rope-twisting device of the sort commonly employed by southwestern Indians was found in use by Seri boys at Costa Rica in 1894 and was included in the Seri collection; but the indications were that the device was a mere toy used, like the horse-hair riatas made by its aid, only in youthful sports.

Summarily, the customary apparel of Seri men and women may be 291
regarded as limited to three articles—(1) a kilt, normally of coarse
textile fabric, which is made a prime necessity by a well-developed
pudency; (2) a short wammus, also normally of coarse textile fabric,
which is apparently regarded as a convenience and luxury rather than a
necessity; and (3) a robe, normally of pelican skin, sometimes substituted
for either or both of the other articles, but ordinarily used as bedding
or as a buckler. The most valued of these articles is the robe, which
in the absence of the others replaces the kilt; yet pudency demands
the habitual use of some form of kilt, while both wammus and robe are
held so far superfluous that they may be laid aside or bartered or
otherwise dispensed with whenever occasion arises.

On considering the special functions and probable genesis of the Seri 182
appareling, the student is impressed by the absence of the breech-clout,
except perhaps in temporary improvisations—though the absence of this 291
widespread article of primitive costumery need awaken little surprise
in view of the environment, and especially of the abounding barbs of
Seriland, which render all appareling of doubtful value save for the protection
of tissues softened by habitual covering. The prevailing thorniness
of the habitat renders the free-flowing and easily removable apron
the most serviceable protection for the exposed vitals of the pubic
region; and this device, a common one in thorny habitats generally,
grades naturally into the short skirt or kilt; while it would well accord
with the maritime habit and habitual thought of the Seri to apply the
tough and densely feathered skin of the pelican to the purpose. This
suggestion as to the nascent covering of the tribe consists with the [776]
tribal faith, in which the Ancient of Pelicans ranks as the creative
deity, while its modern representative is esteemed a protective tutelary
possessing talismanic powers against cold, wet, bestial claw and fang,
alien arrows, and all other evils; so that the use of this feathered pelt
as a shield against spiny shrubbery, sharp-leaved sedges, and barb-thorned
cacti is quite in harmony with Seri philosophy. Accordingly [174]
it seems clear that the pelican-skin kilt was autochthonous among the
Seri, and that it was the original form of tribal appareling; and it is of
no small significance that the type persists in actual use as well as in
suggestive vestigial forms, such as pelican-down swaddling for infants,
pelican-feather plumes on cradle nets, etc.

The passage from the pelican-skin kilt to the garment of textile fabric 174
under the slow processes of primitive thought may not be traced confidently,
though a strong suggestion arises in the Seri hair-cult (a Samsonian 291
faith not without parallel in far higher culture) under which 826
mystical powers and talismanic virtues are imputed to the human
pelage. It is in connection with this cult that the Seri locks are so
attentively cultivated and so assiduously preserved and consecrated
to more intimate personal uses in belts, necklaces, and the like; and
although the connecting links have not been found, it is thoroughly

174 291 [826] in accord with Seri thought to assume that in earlier times the hair necklaces were expanded into rudimentary apparel in connection with pelican-skin shields, and after the conquest of vegetal fibers into more finished garments probably woven partly of hair and worn in such wise as to supplement the natural pelage in the protection of back, shoulders, chest, and arms. If the indication of the tribal cult be valid, it would appear that the wammus was the second piece of apparel in order of genesis, though the first to be made of artificial fabric; and it is noteworthy that the suggestion is supported by the form of the short and free-flowing garment underlying the flowing tresses of warriors and matrons, as well as the vestigial use of human-hair cords for neckbands and fastening strings; while its antiquity in comparison with the textile kilt is indicated by the fact that it is a finished artifact, evidently fitted to its functions by generations of adjustment.

The step from the making of the wammus to the substitution of artificial fabrics for the pelican-skin kilt was an easy and natural one; and it need only be noted that the transition is still incomplete, since the feathered pelt is unquestioningly substituted for the fabric whenever occasion demands, yet that the kilt in some form must be much more archaic than the wammus, since it is correlated with the pudency sense,[1] while the complete garment is not so correlated save in slight and incipient degree.

Accordingly the three articles of apparel may be seriated genetically as (1) the pelican-skin robe, used long as a kilt, and only lately relegated to emergency use and bedding; (2) the well-differentiated wammus of textile fabric with hair-cord fastenings; and (3) the textile kilt, with or without a hair-cord belt. And the three artifacts are local and presumptively—indeed manifestly—autochthonous, and exemplify the interdependence of artifacts and environment no less strikingly than the Seri balsa or basket or jacal.

TOOLS AND THEIR USES

000 In advanced culture tools are finished products, made and used in accordance with preconceived designs or established arts for the production of commodities; in primal life (as well exemplified by Seri handicraft) tools are mere by-products incidental to the largely instinctive activities directed toward the maintenance of life. Accordingly, the tools of advanced culture form the nucleus of industries, while the designless tools of the prime cluster about the outskirts of industrial

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[1] In this writing the conclusion reached in an unpublished discussion of the beginning of clothing is assumed—i. e., that the primal apparel was purely protective, and that the habitual concealment of portions of the body incidental to its wearing gradually planted the pudency sense. The germ of clothing, without attendant pudency, is well illustrated in Karl von den Steinen's observations and discussions of the Brazilian natives (Unter den Naturvölkern Zentral-Brasiliens, Berlin, 1894, pp. 190-193). It is noteworthy that the Seri, more primitive as they are in so many respects than any other American aborigines known, are much farther advanced than the Brazilian natives in appareling and its effects on character. The similarities and the differences are alike interesting; yet in both cases the costumes reflect environmental conditions and needs with remarkable fidelity.

activities; i. e., in developed industries the tool is a primary factor 000 while in nascent industries it is but a collateral.

The tools of any primitive tribe may be defined as appliances used 412 primarily in the production of implements and utensils, and incidentally in preparing food, making habitations, manufacturing apparel, building vehicles or vessels, etc—in short, the appliances used in producing devices for the maintenance of active life. The definition emphasizes both the dearth and the undifferentiated character of Seri tools; for the appliances used in the production of devices are exceedingly few, and are commonly employed also in food-getting or in other vital industries.

Perhaps the most conspicuous general fact in connection with Seri tools and their uses is the prevalence of natural objects employed either (1) in ways suggested by natural functions or (2) in ways determined by the convenience of users; the former grading into artificial devices shaped in similitude of natural objects and employed in ways suggested by natural functions.

Prominent among the natural objects employed in natural ways are mandibles of birds, used in piercing pelts and fabrics; fish spines and [237] bones, also used as piercers; thorns of cacti and mimosas, used in similar ways; teeth and horns of game animals, used in rending their own tissues, and afterward in miscellaneous industrial processes; together with cane splints, used for incising. Frequently the employment of such objects is mere improvisation; yet, so far as could be ascertained through direct observation at Costa Rica, through Mashém's incomplete accounts, and through inquiries from residents on the frontier, even the improvisations are made in accordance with regular custom firmly fixed by associations—quite in the way, indeed, of primitive life generally, and of the physiologic and psychic processes from which primitive custom is so largely borrowed. With these objects may be grouped the turtle-shells and pelican-pelts used as shields against alien [237] and animal enemies or as protectors against the elements; and the Seri sages would class with them the deer-head masks and deer-hoof rattles worn in the dance to at once symbolize and invoke strength and swiftness. One of the most striking among the artificial devices of symbolic motive is the piercer, or awl, of wood or bone, shaped in imitation of the avian mandible; yet still more significant in a vestigial way (provided the most probable inference as to genesis be valid) is the hard-wood foreshaft of arrow and harpoon, shaped and used in trenchant symbolism of the deadly tooth.

There are two conspicuous classes of natural objects employed in 237 ways determined largely by the convenience of the users, viz, (*a*) marine 412 shells and (*b*) beach pebbles.

The marine shells applied industrially comprise the prevailing local 415 genera, *Cardium*, *Mactra*, *Arca*, *Chama*, and others. They are used ordinarily as drinking-cups, dishes, dippers, receptacles for fats and face-

237 paints, and as small utensils generally; and they are used nearly as com-
412 monly for scraping skins, severing animal and plant tissues, digging
[415] graves and waterholes, propelling balsas, and especially for scraping
reeds and sticks and okatilla stems in the manufacture of arrows, harpoons, bows, balsas, and jacal-frames—indeed, the seashell is the Seri familiar, the ever-present handmate and helper, the homologue of the Anglo-Saxon Jack with his hundred word-compounds, a half-personified reflex of habitual action and thought. Ordinarily—always, so far as is known—the shells are used in the natural state, i. e., either in the condition of capture and opening for the removal of the animal, or in the condition of finding on the beach. For certain purposes the fresh and sharp-edged shell is doubtless preferable, and for others the well-worn specimen (like the paint-cup illustrated in plate XXVII) is chosen; but everything indicates that the need for smoothed shells is met by selecting wave-worn specimens, and nothing indicates that the value of the appliance is deemed to be enhanced by wear of use—in fact, the abundance of abandoned shells about the rancherias and camp sites, and over all Seriland for that matter, indicates that the objects are discarded as easily as they are found along the prolific shores.

Next to the shells, the most abundant industrial appliances of the
412 Seri are beach pebbles or cobbles. They are used for crushing shell and bone, for rending the skins of larger animals, for severing tendons and splintering bones, as well as for grinding or crushing seeds, uprooting canes, chopping trees and branches, driving stakes, and for the multifarious minor purposes connected with the manufacture of arrows and balsas and jacales; they are also the favorite women's weapons in warfare and the chase, and are sometimes used in similar wise by the warriors. The material for these appliances paves half the shores of Seriland, and is available in shiploads; and its use not only illustrates Seri handicraft in several significant aspects, but illumines one of the more obscure stages in the technologic development of mankind.

The cobble-stone implements of the Seri range from pebbles to bowlders, and there is a corresponding range in function from light hand-implements at one end of the series to unwieldy anvils and metates at the other end. The intermediate sizes are not infrequently utilized, and are customarily used interchangeably, the smaller of any two used in conjunction serving as the hand implement and the larger as the anvil or metate; yet there is a fairly definite clustering of the objects about two types, a larger and more stationary class, and a smaller and more portable one.

The Seri designation for the larger stone implement is that applied
192 to rock generally, viz, *ahst* (the vowel broad, as in "father"); and it
seems probable that the term is onomatopoetic, or mimetic of the sound
412 produced in the use of the implement as a metate, and that its application to rocks generally is secondary. The designation applied to the

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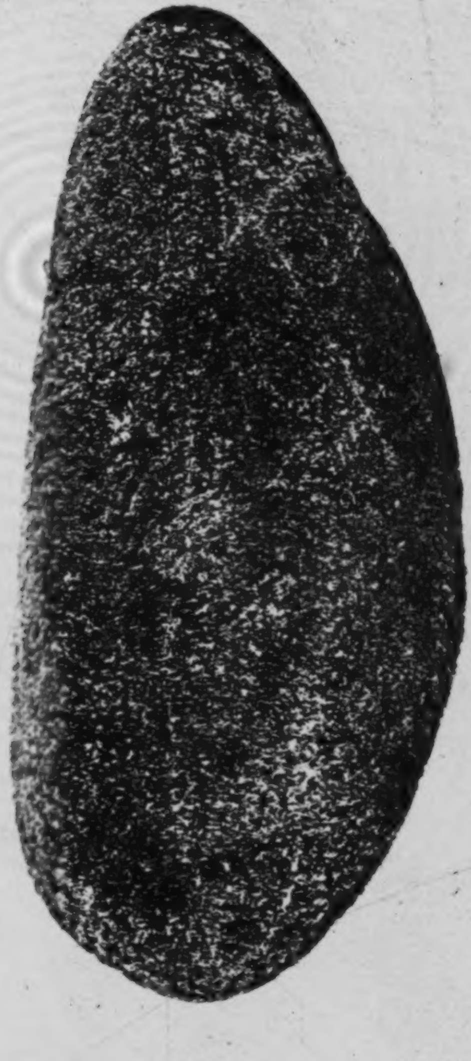


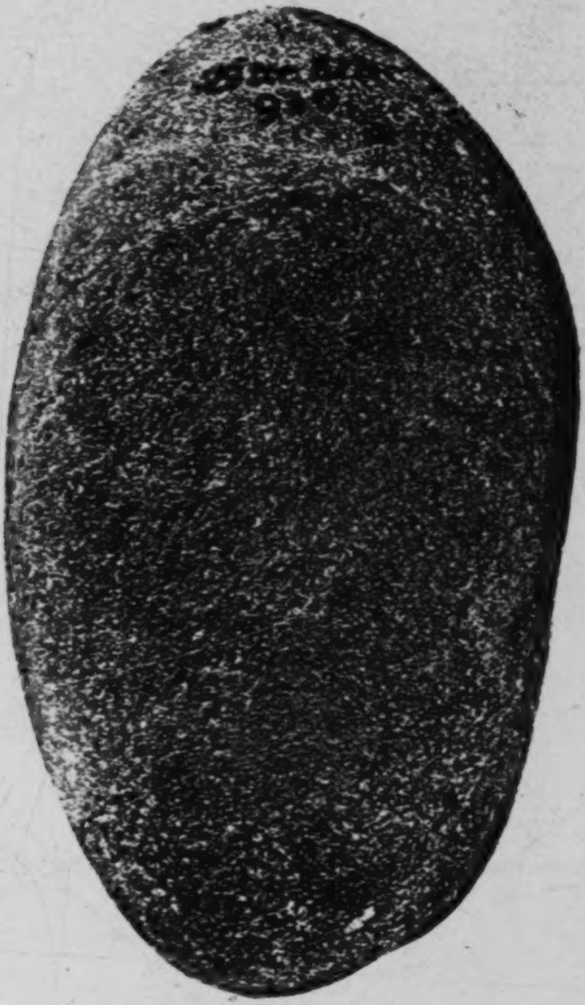
DOMESTIC ANVIL, SIDE

THE HELIOTYPE PRINTING CO., BOSTON

[p. 234 A]

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

412



DOMESTIC ANVIL, TOP

THE HELIOTYPE PRINTING CO., BOSTON

[p.234 B]

412

DOMESTIC ANVIL, BOTTOM

THE HELIOTYPE PRINTING CO., BOSTON

[p. 234 c]

smaller implement is *hupf* or *kupf* (the initial sound explosive, combining 192 the phonetic values of *h* and *k*; the vowel nearly as in "put", or like "oo" in "took"); the term is clearly an onomatope, imitating the sound 412 of the blow delivered on flesh, on a mass of partially crushed mesquite beans, etc—indeed, both the word and the sound of the blow seem to connote food or eating, while regular pounding with the implement (either in ordinary use or by special design) is a gathering signal. So far as ascertained, the term is not extended to other objects save potential implements in the form of suitable pebbles; but it is significant that there is no distinction in speech—nor in thought, so far as could be ascertained—between the natural pebble and the wear-shaped implement.[1] The local terms ahst and hupf are explicit and specific, and without precise equivalents in other known tongues; moreover, the objects designated are too inchoate in development and hence too protean in function to be appropriately denoted by the designations of implements pertaining to more differentiated culture (mortar, metate, pestle, muller, mano, etc). Accordingly it seems desirable to retain the Seri designations.[2]

A typical specimen of intermediate size, used commonly as an ahst, 412 but susceptible of employment as a hupf, is illustrated (natural size) in plates XXXV and XXXVI.[3] It is a hard, tough, hornblende-granite or greenstone, with a few structure-lines brought out by weathering and wave-wearing. Its weight is 4 pounds 10 ounces (2.10 kilograms); its form and surface are entirely natural, save for slight battering shown on the two principal faces and still less conspicuous bruises along one edge (as imperfectly shown toward the left of plate XXXV). The specimen was found in a jacal (illustrated in plate VI) on Rada Ballena, within a few hours after abandonment, in the position in which it was hastily left by the last users; it was smeared with blood and fat (which still remain, as is shown in plate XXXV) and bits of flesh, and bore bloody finger prints of two sizes—those of a man and those of a woman or large child; beside it lay the hupf depicted in plate XLII. In its last use the unwieldly cobble served as an ahst, but the markings on the edge record use also as a hand implement.

A functionally similar implement is illustrated in plate XXXVII (on reduced scale; maximum length 8¼ inches = 210 cm.). It is of tough but slightly vesicular and pulverulent volcanic tuff, pinkish-buff in color, and weighs 4 pounds 1 ounce (1.84 kilograms). The form and surface are almost wholly natural, save for slight battering about the larger end and severer battering, with the dislodgment of a flake, about the thinner end; yet the faces are smeared with blood and grease and flecked with turtle debris, and bear a few marks of hupf blows, as is shown in the reproduction. This specimen was found at a temporary camp of a small party on Punta Miguel, where it had been used in breaking up a turtle—the camp having been abandoned so precipitately that a considerable part of the quarry, with this hupf, the ahst illustrated in plate LIV, the turtle-harpoon shown in figure 20, the half-made fire, and the fire-sticks used in kindling it, were left behind. The specimen is a good example of the cobbles carried into portions of the territory lacking the material (the camp at which it was found was on the great sandspit forming the eastern barrier of Boca Infierno, several miles from the nearest pebbly shore); it is of less specific gravity than the average rocks of the region, and looks still lighter by reason of its color and texture. Similar cobbles abound along the eastern coast of Tiburon, being derived from the immense volcanic masses of Sierra Kunkaak.

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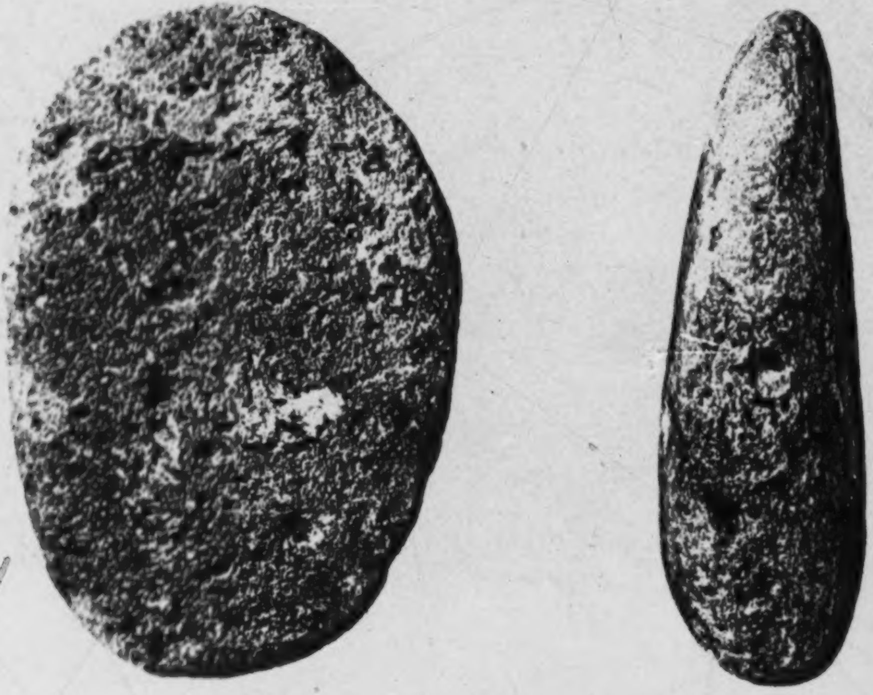
[1] The failure to discriminate natural objects from artificialized implements produced from such objects by wear of use is a noteworthy trait of primitive folk. It is conspicuous among the acorn Indians of California, who fail to apperceive the manufacture of their own mills and who conceive that their bowlder mortars and creek pebble pestles, even when completely artificialized by a generation's use, are merely found and appropriated; and a similar state of mind persists among the well-advanced Papago, who have no conception of making their well-finished mortars and pestles, or even the stone tomahawks occasionally surviving, but regard the implements as fruits of discovery or treasure-trove only. [171]

[2] It should be noted that the terms used in the titles of the accompanying plates are not denotive, but merely descriptive.

[3] This, like the other illustrations of the series (except plate LVI, which is a lithograph, partly process and partly handwork), are photo-mechanical reproductions made directly from the objects; all are natural size unless otherwise specified. [126]

About the more permanent rancherias and on many abandoned sites lie ahsts usually too heavy for convenient transportation. In the habitable jacales such stones form regular household appurtenances, without which the menage is deemed incomplete; though the implement is commonly kicked about at random, often buried in debris (perhaps to be completely lost, and brought to light only by geologic changes, as demonstrated by the shell-heap of Punta Antigualla), and pressed into service only in case of need. An exceptionally well-worn specimen of the kind is illustrated in plate XXXVIII (scale one-half linear; maximum width measured on base, 9¼ inches = 235 cm.). The material is a hard, ferruginous, almost jaspery quartzite, somewhat obscurely laminated. It weighs 10 pounds 11 ounces (4.85 kilograms). It is a natural slab, evidently from a talus rather than the shore, its native locus being probably the western slope of Sierra Seri. The edges and apex are formed by natural fractures; the most-used face (that shown in the plate) is a natural structure plane; the obverse side is partly a similar plane, partly irregular; while the base is an irregular fracture, evidently due to accident after the specimen had been long in use, though the fracture occurred years or decades ago, as indicated by the weathering of the surfaces. The entire face of the slab is worn and more or less polished by use as a metate, the wear culminating toward the center of the base (evidently the center of the original slab), where the hollowing reaches some three-sixteenths of an inch (5 mm.); yet even in the depths of the incipient basin the polished surface is broken by irregular pitting of a sort indicating occasional use as an anvil. The edges are quite unworn, but the smoother portion of the obverse is

(p.236 A)



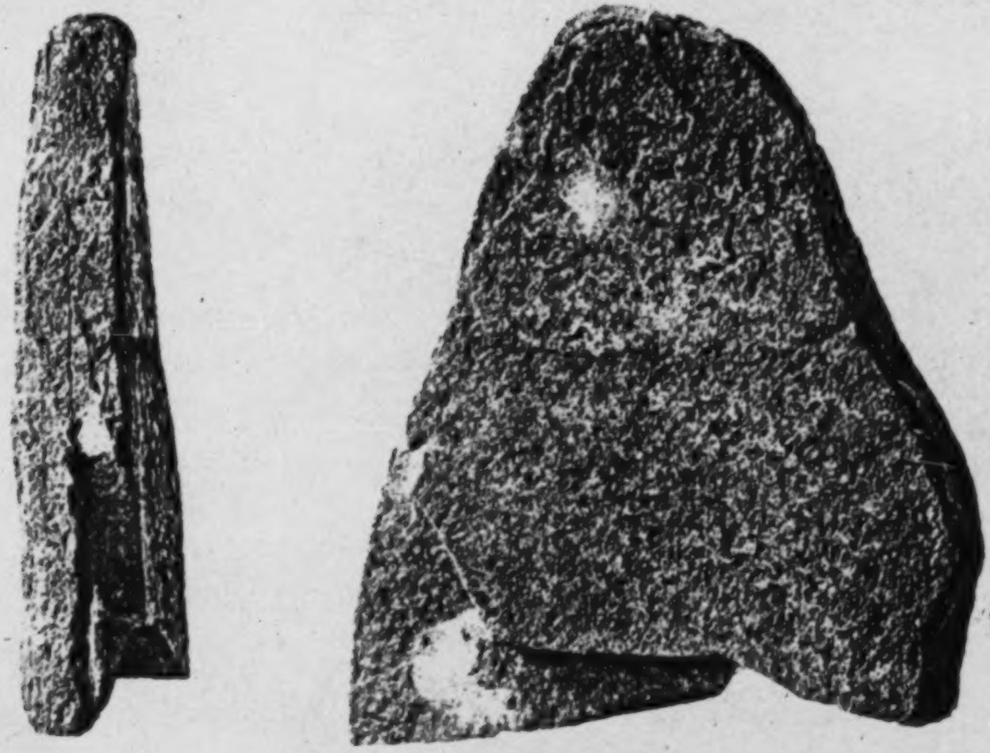
DOMESTIC ANVIL (REDUCED), TOP AND SIDE

THE HELIOTYPE PRINTING CO., BOSTON

412

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

[p.236 B]



METATE (REDUCED), EDGE AND TOP

THE HELIOTYPE PRINTING CO., BOSTON

worn and polished like the face, though to a less degree. The specimen was found at a recently occupied jacal, midway between Punta Antigualla and Punta Ygnacio; it lay in the position of use, though half concealed by a cholla thrown over it, with the hupf shown in plate LVI; it was soaked with fat and smeared with the debris and intestinal contents of a turtle, as partly shown in the illustration. 412

The largest ahst seen in Seriland is illustrated in plates XXXIX and XL, on a scale of one-third linear (its maximum length being 15¼ inches = 386 cm.); it is a dark, fine-grained silicious schist or quartzite, quite obscurely laminated; it weighs 33 pounds 8 ounces (15.20 kilograms). It is a natural slab, probably washed from a talus and slightly wave-worn; it might have come originally from either the southwestern flanks of Sierra Seri or the more southerly half of Sierra Kunkaak—certainly hundreds of similar slabs strew the eastern shore of Bahia Kunkaak, while the western shore, especially about Punta Narragansett, would yield thousands. Its artificial features (aside from miscellaneous battering) are limited to grinding of the two faces defined by structure planes. The principal face is abraded into an oblong or spoon-shape basin, about 8 inches (20 cm.) long, 5 inches (16 cm.) broad, and fully three-fourths of an inch (2 cm.) deep, the basin penetrating two or three laminæ of the slab in such wise as to produce the annular markings faintly shown in plate XXXIX; the obverse is slightly rubbed and ground and somewhat battered, like the face of the preceding specimen; and both sides are flecked with a fine but dark flour-like substance (doubtless derived from grinding mesquite beans, etc) forced into the texture of the stone by the grinding process. The entire slab is greasy and blood-stained, while battered spots about the edges and angles of the principal face record considerable use as an anvil for breaking up quarry—indeed, shreds of turtle flesh and bits of intestinal debris still lodge in some of the interstices. The specimen was taken from the old rancheria at the base of Punta Tormenta, where it had apparently been in desultory use for generations.

A sort of connecting link between ahst and hupf is afforded by elongate beach pebbles, such as that illustrated in plate XLI, which lay beside the large ahst last described, and which bears a few inconspicuous marks of use in slight battering at both ends, with a few shreds of turtle flesh about the blunter extremity (at the right on the plate). The specimen is shown natural size; it is of pinkish-gray trachyte (?), and weighs 1 pound 12 ounces (0.79 kilograms). It is noteworthy chiefly as an illustration of the Seri mode of seizing and using hand-implements (a mode repeatedly observed at Costa Rica in 1894); the pebble comfortably fits the Caucasian hand, held hammerwise; it is intuitively grasped in this way, and when so seized and used with an outward swing forms an effective implement for bone-crushing, etc, the natural striking-point being near the free end; but the centripetally moving Seri invariably seizes the specimen in such manner that the

free end is directed inward, while the thumb laps over the grasped end,
412 when the strokes are directed downward and inward, the striking-point being the extreme tip of the free end. A similar specimen is illustrated in plate XLII. It is of tough and homogeneous hornblende-granite, somewhat shorter and broader than its homologue, but of exactly the same weight; it, too, is battered at the ends, but is otherwise quite natural in form. It was collected at Rada Ballena in conjunction with the ahst illustrated in plate XXXV; and like that specimen it is soaked with blood and fat, and bore shreds of flesh when found. Both these elongate cobbles are of interest as representatives of a somewhat aberrant type; for the favorite form of hupf is shorter and thicker, as shown by the prevailing shapes, both in use and lying about the jacales—indeed, the elongate form is seldom used on the coast and never carried into the interior.

A typical hupf is illustrated in plate XLIII. The specimen is of fine-grained, dense, and massive quartzite, its homogeneity being interrupted only by a thin seam of infiltrated silica and by an obscure structure-plane brought out by weathering toward the thinner end. Its weight is 1 pound 14 ounces (0.85 kilogram). In general form and surface the specimen is an absolutely natural pebble, such as may be found in thousands along the shores of Seriland. Its artificial features are limited to slight battering about the edges, especially at the thinner end; partial polishing of the lateral edges by repeated handling (as imperfectly shown in the edge view); very perceptible polishing of both faces by use as a grinder; some fire-blackening on both sides; semisaturation with grease and blood; and the flecks of red face-paint shown in the reproduction. The specimen was obtained at Costa Rica after some days' observation of its use. The chief observed functions of this implement were as follows: (1) Skinning the leg of a partially consumed horse; this was done by means of centripetal (i. e., downward and inward) blows, so directed that the thinner end fell obliquely on the tissue, bruising and tearing it with considerable rapidity. (2) Severing tough tendons already sawed nearly through by rubbing over the edge of an ahst, the hupf in this case being in the hands of a coadjutor and used in rather random strokes whenever the tissue seemed particularly refractory. (3) Knocking off the parboiled hoof of a horse to give access to the coffinbone. (4) Crushing and splintering bones to facilitate sucking of the marrow. (5) Grinding mesquite beans; the process being begun by vertical blows with the end of the implement on a heap of the pods resting on an ahst, continued by blows with the side, and finished by kneading and rubbing motions similar to those of grinding on a metate. (6) Pounding shelled corn mixed with slack lime, in a ludicrously futile attempt to imitate Mexican cookery. (7) Chopping trees; in this case the implement was grasped in the centripetal manner and used in pounding and bruising the wood at the point of greatest bending under the pull of a coadjutor. (8) Cleaving and

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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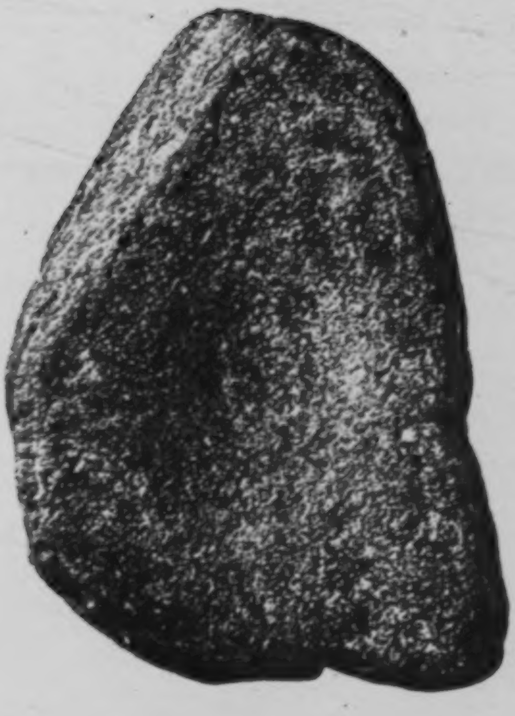

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LONG-USED METATE (REDUCED), TOP

(p. 235 ?)

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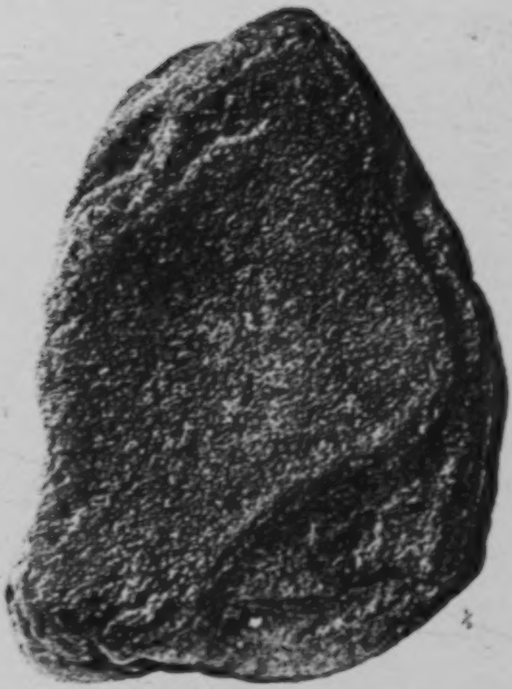

LONG-USED METATE (REDUCED), BOTTOM

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[p. 238 B]

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breaking wood for fuel. (9) Dethorning okatilla stems, by sweeping centripetal strokes delivered sidewise from top toward butt of a bunch of stems lying on the ground. (10) Severing a stout hair cord; in this use it was grasped between the knees of a matron squatting on the ground, while the cord was held in both hands and sawed to and fro over the use-roughened thinner end. (11) Supporting a kettle (shown in plate x) as one of the fire-stones used in frontier mimicry of the Papago custom. (12) Triturating face-paint by pounding and kneading; in one case the specimen served as a hand implement, while in another case it took the place of the slab, the other lump itself being struck and rubbed against it. (13) Beating a troop of dogs from a pile of bedding in a *jacal*; in this use the implement was held in the customary manner and used in swift centripetal blows, the matron relying on her own swiftness and reach and not at all on projection to come within reach of her moving targets; the blows usually landed well astern, and were so vicious and vigorous as to have killed the agile brutes had they chanced to fall squarely—indeed, one blow temporarily paralyzed a large cur, which escaped only by running on its fore feet and dragging its hind quarters. In most of these uses the specimen was employed in conjunction with an improvised slab in the form of a stone carried from the rancho. Several of the processes, notably those of tissue-tearing and dog-beating, were executed with a vigor and swiftness quite distinct from the sluggish lounging of the ordinary daytide and, indeed, partaking of the fierce exaltation normal to the Seri chase. When not in use the implement usually lay just within the open end of the owner's jacal, though it was often displaced and sometimes kicked about the patio for hours. It was one of perhaps a dozen similar implements brought across the desert from the coast by as many matrons. All were regarded as personal belongings pertaining to the custodians about as definitely as articles of apparel, though rather freely loaned, especially in the owner's clan. The specimen was purchased from the possessor, who parted from it rather reluctantly, though with the tacit approval of her clanswomen, at a rate implying considerable appreciation of real or supposed value. Three or four other matrons declined to barter their *hupfs*, either arbitrarily or on the plea that they were a long way from the source of supply.

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A common variety of *hupf* is illustrated in plate XLIV. It is of pinkish, slaty tuff of rather low specific gravity, somewhat vesicular and pulverulent, though moderately hard and tough. It weighs 17 ounces (0.48 kilogram). In form and surface it is essentially a wave-worn pebble, doubtless derived originally from the volcanic deposits of Sierra Kunkaak. Its artificial markings are limited to slight battering about the edges, especially at the thinner end (as shown in the edge view); slight rubbing, striation, and semipolishing of the smoother face (shown in the plate); a few grease spots and a stain showing use in crushing sappy vegetal matter, also on this face; and an inconspicuous

412 fire-mark on the obverse. It was found in a recently abandoned jacal near Campo Navidad. It is one of the three tuff specimens among those collected, one of a dozen or two seen; perhaps 10 per cent of the implements observed in Seriland are of this material, and it is significant that this ratio is several times larger than the proportion of tuff pebbles to the entire paving of the beaches, so that the material seems to be a preferred one. The preference was indeed discovered at Costa Rica in 1894, where two or three of the more highly prized hapfs were of this material, and where vague intimations were obtained that it is especially favored for meal-making, doubtless by reason of the association of color and texture—associations that mean much to the primitive mind, perhaps in suggesting that the grinding is easier when done by a soft implement. An economic reason for the preference is easily found in the lower specific gravity, and hence the greater portability of a hapf of ordinary size, of this material; but there is nothing to indicate that this economic factor is weighed or even apperceived by the Seri.

A typical pebble bearing slight marks of use is illustrated in plate XLV. It is of fine-grained pinkish sandstone, probably tuffaceous, and is fairly hard and quite tough; it weighs 1 pound 9 ounces (0.71 kilogram). It is wholly natural in form and surface save for slight battering or pecking on the face illustrated, and for a few stains of grease and abundant marks of fire. It was found in a fire still burning (and abandoned within a half-hour, as indicated by other signs) two or three miles inland from Punta Granita on the Seri trail toward Aguaje Parilla, whither it had evidently been carried from the coast.

A fairly common material for both hapfs and ahets is highly vesicular basalt grading into pumice stone, the material corresponding fairly with a favorite metate material among the Mexicans. The rock was not certainly traced to its source, but seems to come from the northern part of Sierra Kunkaak. A typical hapf of this material is shown in plate XLVI; it weighs 1 pound 13 ounces (0.83 kilogram). It is wholly natural in every respect save for slight grinding and subpolishing, with some filling of interstices, on both faces. From the slight wear of this specimen, together with the absence of battering, and from similar features presented by others of the class, it may be inferred that implements of this material are habitually used only for grinding—for which purpose they are admirably adapted. The specimen emphasizes the importance of the hapf in Seri thought, for it was one of a small series of mortuary sacrifices from a tomb at Pozo Escalante (ante, p. 290).

Throughout the surveys of Seriland, constant search was made for cutting implements of stone; and the nearest approach to success was exemplified by the specimen illustrated in plate XLVII. It is of bluish-gray volcanic rock (not specifically identified) of close texture and decided toughness and hardness; it weighs 10 ounces (0.28 kilogram). In greater part its form and surface are natural, but a projecting por-

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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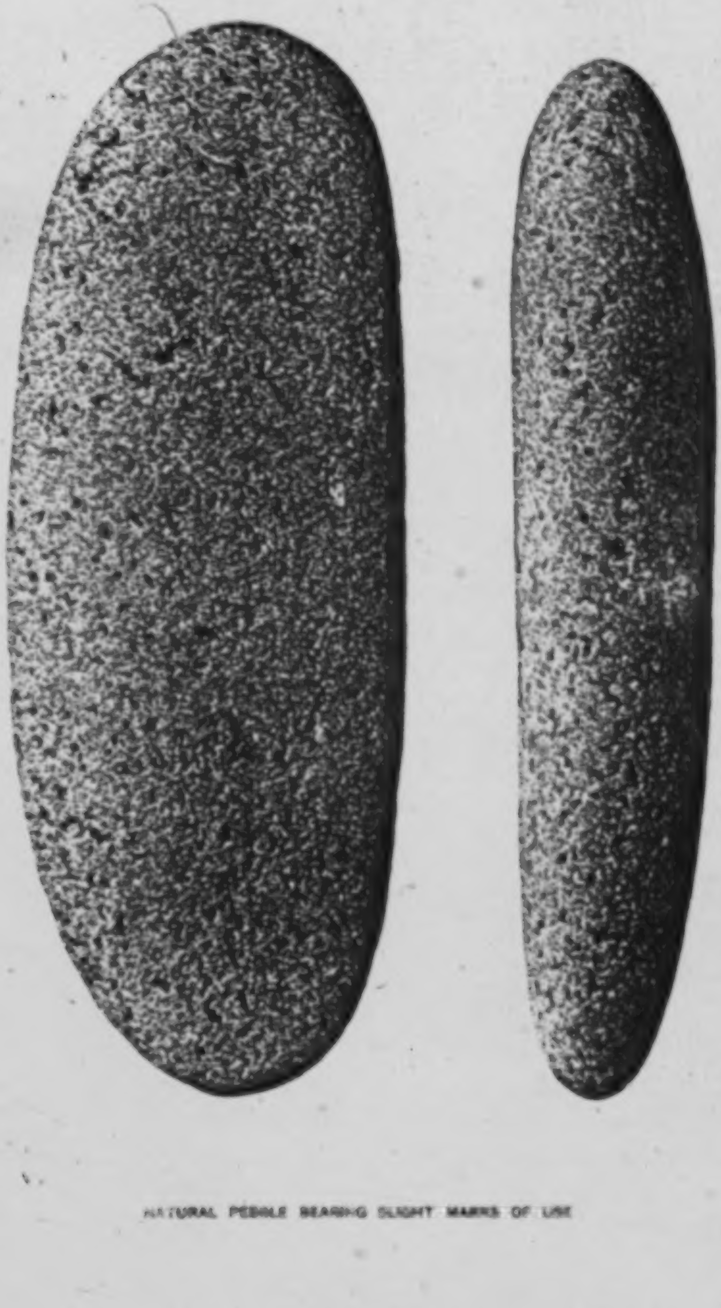

NATURAL PEBBLE BEARING SLIGHT MARKS OF USE

[p. 240A]

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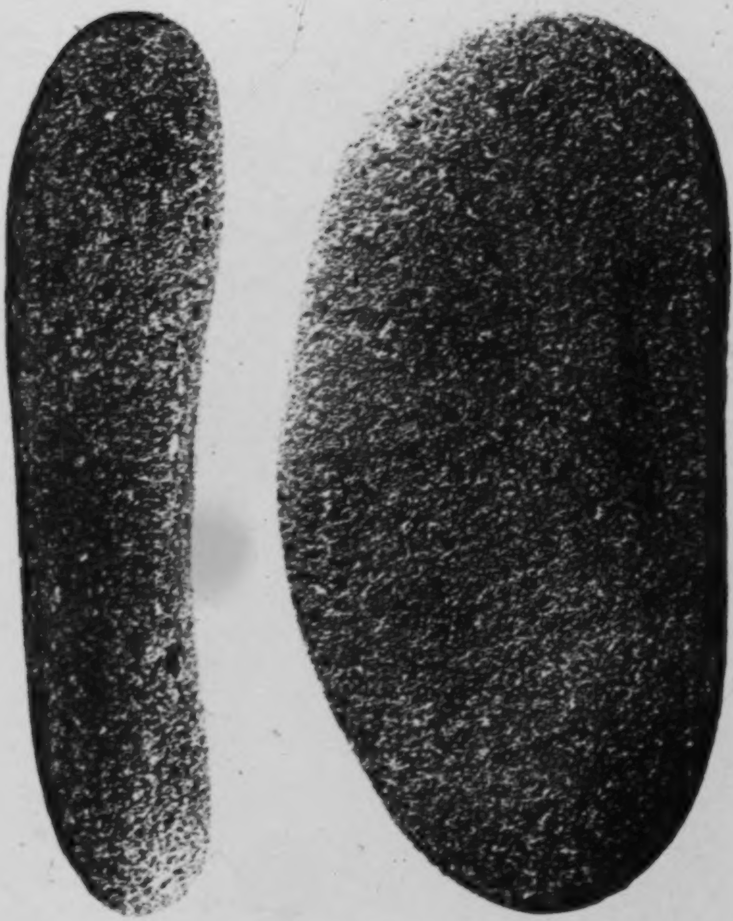

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NATURAL PEBBLE USED AS BONE-CRUSHER

[p. 240 B]

tion brought out by weathering on one side is split off, presumably by intention, and the fractured surface thus produced is partly smoothed by rubbing, probably in use, though possibly by design. The edges are more or less battered, especially at the ends, and several rude flakes have been knocked off, evidently at random and presumably in ordinary use as an abat. The smoother face is wholly natural. The specimen was picked up in a jacal at Rada Ballena, but bore no marks of recent use.

A tuff implement of suggestively ax-like form is shown in plate XLVIII; it is firmer and less pulverulent but more vesicular than most implements of its class; it weighs but 7 ounces (0.20 kilogram). The specimen was picked up in a ruinous jacal, which had evidently been occupied temporarily within a fortnight, on the summit of the great shell-mound forming Punta Antigualla. The somewhat indefinite texture and color render it difficult to distinguish between natural and artificial features; but careful examination indicates that it is wholly natural in form and in nine-tenths of the surface, and that the ax-like shape expresses nothing more than accidents of structure and wave-work. This interpretation is practically established by the slight battering along the edges and about the smaller end, as illustrated in the edge view; for this wear of use, which has produced a distinctive surface, is practically absent from the notches which give the ax-like effect. Besides the battering, the only artificial marks are ancient fire-stains on one of the faces. On the whole it is clear that the artificial appearance catching the eye at first glance is purely fortuitous, and that the specimen is but a natural pebble very slightly modified by ordinary use.

A suggestive specimen is illustrated in plate XLIX; it is of purplish-gray granitoid rock, of decided toughness and considerable hardness, and weighs 12½ ounces (0.35 kilogram). The surface and general form indicate that it is a natural pebble entirely without marks of artificial use; but the regular curvature of the principal face (the shape is that of a segment of a cylinder rounded toward the ends) suggests artificial shaping, while it was found far in the interior, near Barranca Salina, whither it must have been carried from the coast. It may possibly be a fragment of a pestle subsequently wave-worn; but all the probabilities are that it is wholly natural, and that its suggestive features are fortuitous.

The constant search for chipped or flaked tools which was extended over nearly all Seriland seldom met the slightest reward; but the specimen shown in plate L was deemed of some interest in connection with the search. It is of hard and tough greenstone, showing obscure and irregular structure lines, though nearly homogeneous in texture; it weighs 10 ounces (0.28 kilogram). It is primarily a natural pebble with form and surface reflecting structure and texture in connection with wave-action. Its artificial features are limited to the usual slight battering of the smaller end, still less conspicuous battering or grind-

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ing of the margin about the larger end, slight but suggestive chipping of the thinner edge, inconspicuous hand-wear and polish on the principal face, and a few obscure scratches or striæ on the same face, as illustrated in the plate. The position and character of the flake-fractures, which are fairly shown in the edge view, indicate that they were made while the pebble was in use as a bruising or cutting tool, a use at once suggested to the Caucasian mind by the form of the pebble; yet it is noteworthy that its thin edge displays less battering than either end of the object and no more than the opposite and thicker edge, while it is still more significant that the specimen was apparently discarded immediately on the modification of form by the spalling—a modification greatly increasing its efficiency, as all habitual users of chipped stone tools would realize. The specimen is one of a large number of examples showing that whenever a hupf is broken in use it is regarded as ruined, and is immediately thrown away. This particular specimen is archaic; it was found in the cliff-face of the great shell-heap at Punta Antigualla, embedded in a tiny stratum of ashes and charcoal (some of which still adheres, as shown in the black flecking at the outer end of the striæ), associated with scorched clam-shells, typical Seri potsherds, etc, some 40 feet beneath the surface.

While the great majority of the hupfs are mere pebbles bearing slight trace of artificial wear, as illustrated by the foregoing examples, others bear traces of use so extended as to more or less completely artificialize the surface. A typical long-used hupf is depicted in plates LI and LII. It is a tough and hard quartzite, dark gray or brown in color, massive and homogeneous in texture; it weighs 2 pounds 4 ounces (1.02 kilograms). In general form it is a typical wave-worn pebble of its material, and might be duplicated in thousands along the shores of Bahia Kunkaak and El Infiernillo; but fully a third of its surface has been more or less modified by use. The flatter face (plate LI) is smeared with blood, grease, and charcoal, which have been ground into the stone by friction of the hand of the user in such manner as to form a kind of skin or veneer; portions of the face bear a subpolish, due probably to the hand-rubbing in use; near the center there is a rough pit about an eighth of an inch (3 mm.) deep, evidently produced by pecking or battering with metal, while three or four neighboring scratches penetrating the veneer appear to record ill-directed strokes of a rather sharp metal point. In the light of observed customs it may be inferred that this pitting was produced by use of the implement as an anvil or abat in sharpening a harpoon-point and fitting it into its foreshaft. The thinner edge (shown in plate LI; that toward the right in the face view on the same plate) displays considerable battering of the kind characteristic of Seri hupfs in general; it is smoked and fire-stained, as shown, while the lower rounded corner is worn away by battering to a depth of probably one-fourth inch (5 mm.). The obverse face reveals more clearly the battering about both corners and edges,

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1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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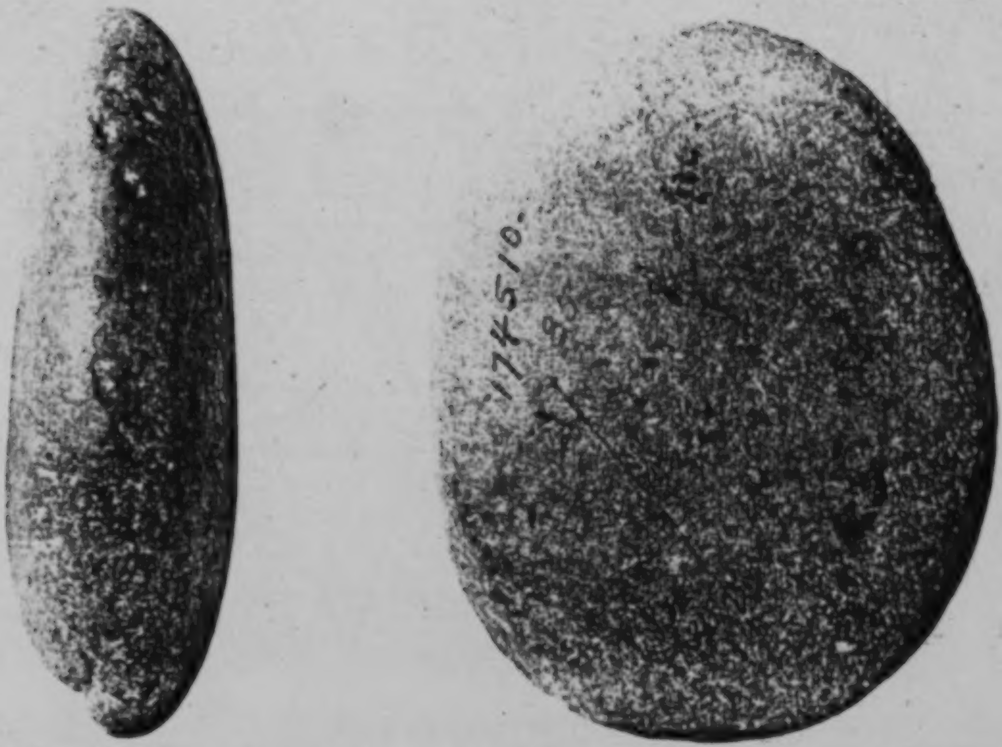

LITTLE-WORN PEBBLE USED FOR ALL DOMESTIC PURPOSES

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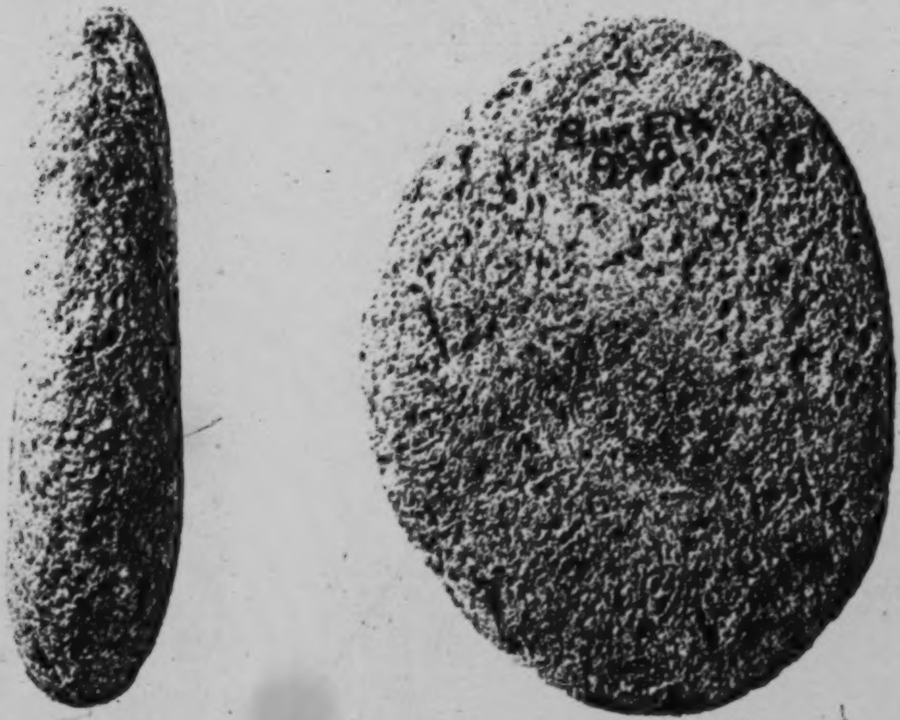
[p.242 B]



NATURAL PEBBLE USED AS CRUSHER AND GRINDER

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including the dislodgment of a flake toward the narrower end; but its most conspicuous feature is a broad subpolished facet (rounding slightly toward the thinner edge) produced by grinding on a flat-surface shot. This face, too, exhibits fire-staining, while the surface beyond the facet—and to a slight extent the facet itself—is vemeered like the other face. There are a few scratches on this side also, as well as a slight pitting due to contact with metal. The thicker edge (plate LII) displays considerable battering, especially a recent pitting near the middle evidently due to use as an anvil held between the knees for sharpening a harpoon point by rude hammering. The specimen was one of a score of implements lying about the interior of the principal jacal in the great rancheria at the base of Punta Tormenta (illustrated in plate VII).

A related specimen, though of somewhat aberrant form, is illustrated in plate LIII. It is of peculiarly tough and quite hard greenstone and weighs 2 pounds 1 ounce (0.93 kilogram). Somewhat less than half of the surface is that of a wave-worn pebble; the remainder is either battered out of all semblance to wave-work, or thumb-worn by long-continued use. The object well illustrates the choice of the most prominently projecting portion of the hand-implement as the point of percussion, and consequently the concentrated wear on such portions whereby the object is gradually reduced to better-rounded and more symmetric form. This specimen displays some minor flaking, apparently connected with the battering and regarded by the user as subordinate to the general wear. It was found at Punta Tormenta, concealed in the wall of a jacal, as if preserved for special use.

One of the best-known examples of a use-perfected hupf is illustrated in plate LIV. It is of coarse-grained but massive and homogeneous granite, similar to that forming Punta Blanca, Punta Granita, and, indeed, much of the eastern coast of Bahia Kunkaak. It weighs 1 pound 10 ounces (0.74 kilogram). In general form it is just such a pebble as is produced from this material by wave-wear, and might be duplicated along the shores in numbers. The artificial surfaces comprise (1) both ends, which are battered in the usual manner; (2) both lateral edges, of which one is slightly battered and worn, while the other is somewhat battered and also notched, evidently by a chance blow and the dislodgment of a flake; (3) both faces, which are flattened by grinding, while one of them (that shown in the plate) is slightly pitted, evidently by metal-working; so that the natural surface is restricted to small areas about the corners. The implement was found at the camp site on Punta Miguel, already noted (page 189), whence a group of five Seri were frightened by the approach of the 1895 expedition; it was covered with blood and shreds of turtle flesh, and is still saturated with grease. Moreover, it is quite confidently identified (not only by form and material, but especially by the fortuitous notch) as a hupf seen repeatedly at Costa Rica in 1894; it was the property of a matron of the Pelican clan (whose portrait appears in plate XXII), who was observed to use it for various industrial purposes, and who refused to part with it for any consideration.

A still more beautiful example of Seri stone art is depicted in plate LV. It is of the same homogeneous and coarse-grained granite as the last specimen, and closely approaches it in dimensions; it is slightly longer and broader, but somewhat thinner, and weighs 1 pound 11 ounces (0.77 kilogram); and, except for the absence of the accidental notch, its artificial features are still more closely similar. The ends are slightly battered, as illustrated in the end view at the right of the plate; the edges are similarly worn, but to a less extent; while both sides have been symmetrically faceted by use in grinding, the facets being straight in the longitudinal direction but slightly curved in the transverse direction, in the shape of the Mexican mano. The specimen displays well-marked color distinctions between the artificially worn and the natural surfaces, the former being gray and the latter weathered to yellowish or pinkish-brown; these colors show that something like two-thirds of the surface is artificial and the intervening third natural; and the natural portion corresponds in every respect, not only in form but in condition of surface, with the granite cobbles of Seriland's stormy shores. Unfortunately the color distinctions, with the limits of faceting and other artificial modifications, are obscure in the photomechanical reproduction; they are indicated more clearly in the outline drawing oversheet. The specimen is partially saturated with fat, and bears an ocher stain attesting use in the preparation of face-paint. It was found carefully wrapped in a parcel with the shell paint-cup illustrated in plate XXVII, a curlew mandible, two or three hawk feathers, and a tuft of pelican down (the whole evidently forming the fetish or medicine-bag of a shamanistic elderwoman), in an out-of-the-way nook in the wall of an abandoned jacal at Punta Narragansett.

A somewhat asymmetric though otherwise typical hupf is illustrated in natural colors in plate LVI. It is of andesite, and may have come originally either from the extensive volcanics of southern Sierra Seri or central Sierra Kunkaak; it weighs 1 pound 15 ounces (0.88 kilogram). The general form is that of a wave-worn cobble, and fully one-third of the surface retains the natural character save for slight smoothing through hand friction in use. The chief artificial modification is the faceting of both sides in nearly plain and approximately parallel faces, the maximum thickness of material removed from each side, estimated from the curvature of the adjacent natural surface, being perhaps three-sixteenths of an inch (5 millimeters); in addition, both ends are battered in the usual fashion, while the thinner and more projecting edge is battered still more extensively, in a way at once subserving convenient use and tending to increase the symmetry of form. One of the facets is quite smooth; the other (that on the right in the plate) is slightly pitted, as if by use in metal-working. The specimen is somewhat greasy—the normal condition of the hupf—and bears

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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NATURAL PEBBLE SLIGHTLY USED AS HAMMER AND ANVIL

[p.244A]

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conspicuous records of its latest uses; both faces (more especially the pitted one) are stained with sap from green vegetal substance (probably immature mesquite pods), while one face is brilliantly marked with ocher in such manner as to indicate that a lump of face-paint was partially pulverized by grinding on the slightly rough surface. It was found, together with the abat illustrated in plate XXXVIII, in the rear of a recently occupied jacal midway between Punta Antigualla and Punta Ygnacio, cached beneath a thorny cholla cactus uprooted and dragged thither for the purpose. The trail and other signs indicated that the jacal had been occupied for a few days and up to within twenty-four hours by a family group of six or seven persons; that it was vacated suddenly at or about the time of arrival of the party of five whose trail was followed by the 1895 expedition from Punta Antigualla to Punta Miguel (where they were interrupted in the midst of a meal and frightened to Tiburon); and that the larger party fled toward the rocky fastnesses of southern Sierra Seri.

Of the foregoing hupfs several are aberrant, and serve merely to illustrate the prevailing directions of departure from the optimum form and size of implements. Six of the specimens may be deemed typical; they are as follows:

Plate No.	Locality	Material	Weight	Condition
			Lb. Ozs.	
XLIII	Costa Rica	Quartzite	1 14 (0.85 kg.)	Nearly natural.
XLIV	Campo Navidad	Tuff	1 1 (.48 kg.)	Four-fifths natural.
XLVI	Pozo Escalante	Vesicular lava.	1 13 (.82 kg.)	Nearly natural.
LIV	Punta Miguel	Granite	1 10 (.74 kg.)	One-fifth natural.
LV	Punta Narragansett	do	1 11 (.77 kg.)	One-fourth natural.
LVI	South point Sierra Seri.	Andesite	1 15 (.88 kg.)	One-third natural.

From these specimens a type of Seri hand implement may easily be formulated: it is a wave-worn pebble or cobble of (1) granite, quartzite, or other tough and hard rock, (2) tuff, or other light and pulverulent rock, or (3) vesicular lava; it is of flattened ovoid form, or of biscuit shape; it weighs a trifle under 2 pounds (about 0.85 kilogram); originally the form and surface are wholly natural, but through the chance of use it is modified (*a*) by a battering of the ends and more projecting edges, and (*b*) by grinding and consequent truncation of the sides; though initially a natural pebble, chosen nearly at random from the beach, it eventually becomes personal property, acquires fetishistic import, and is buried with the owner at her death. [422] [764]

The abats and the heavier cobbles used alternatively as abats and hupfs are too fortuitous for reduction to type; while the protean peb-

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

412 bles utilized in emergency, and commonly discarded after a single use, are too numerous and too various for convenient or useful grouping.

411 [114] There is a distinctive type of Seri stone artifacts represented by a single category of objects, viz, chipped arrowpoints. Several of the literary descriptions of the folk—particularly those based on secondhand information and far-traveled rumor—credit the Seri with habitual use of stone-tipped arrows,[1] and it is the current fashion among both Mexican and Indian residents of Sonora to ascribe to the Seri any shapely arrowpoint picked up from plain or valley; yet the observations among the tribesmen and in their haunts disclose but slight basis for classing the Seri with the aboriginal arrow-makers of America.

Among the 60 Seri (including 17 or 18 warriors) at Costa Rica in 1894, three bows and four quivers of arrows were observed, besides a number of stray arrows, chiefly in the hands of striplings. The arrows seen numbered some 60 or 70, including perhaps 20 "poisoned" specimens; nearly half of them were tipped with hoop-iron, as illustrated in plate XXX, while about as many more were fitted only with the customary foreshafts (usually sharpened and hardened by charring), and the small remainder had evidently lost iron tips in use; there was not a single stone-tipped arrow in the rancheria. Moreover, when the usually incisive and confident Mashém was asked for the Seri term for stone arrowpoint he was taken aback, and was unable to answer until after lengthy conference with other members of the tribe—his manner and that of his mates clearly indicating ignorance of such a term rather than the desire to conceal information so frequently manifested in connection with esoteric matters; and the term finally obtained (*ahst-akk*, connoting stone and arrow) is the same as that used to denote the arrowpoint of hoop-iron. The most reasonable inference from the various facts is that whatsoever might have been the customs of their ancestors, the modern Seri are not accustomed to stone arrow-making.

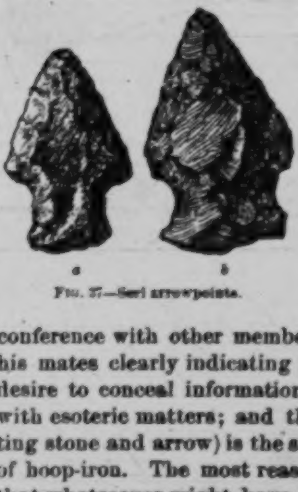

FIG. 37—Seri arrowpoints.

172 411 The 1895 expedition was slightly more successful in the search for Seri arrows. About midway between the abandoned Rancho Libertad and Barranca Salina, an ancient Seri site was found to yield hundreds of typical potsherds, half a dozen shells such as those used for utensils, the fragments of a hupf evidently shattered by use as a fire-stone, and the small rudely chipped arrowpoint shown in figure 37*a*; and among the numerous relics found on a knoll overlooking Pozo Escalante (including two jacal frames, two or three graves, an ahst, several shells

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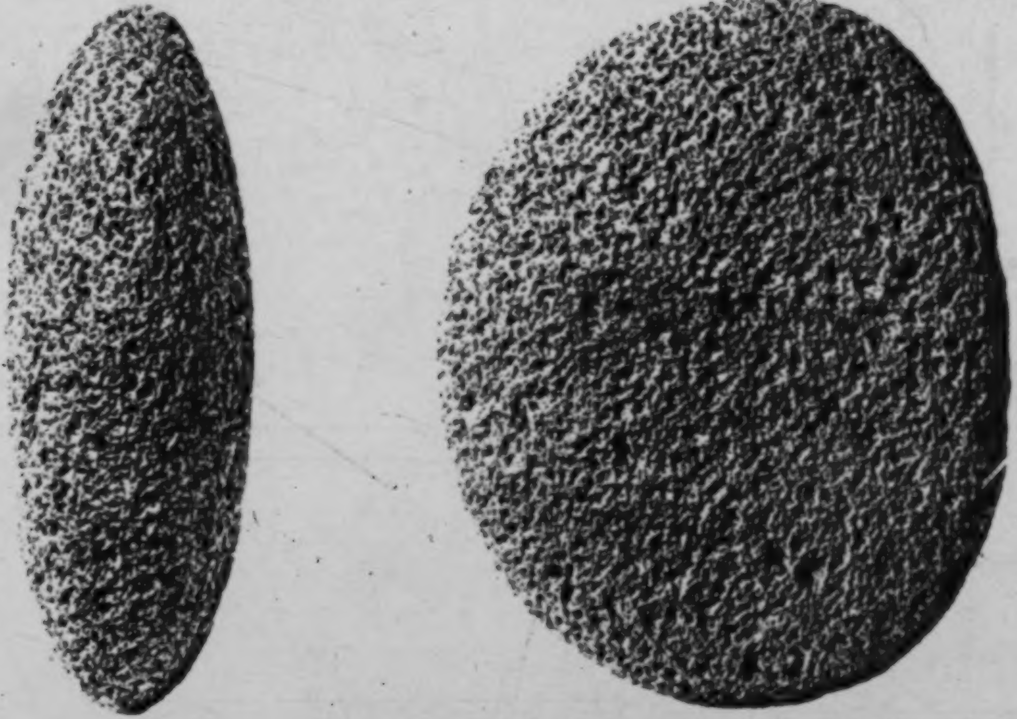
[1] The most specific reference is that of Hardy: "The men use bows and stone-pointed arrows; but whether they are poisoned, I do not know." Travels, p. 296.

[p. 246A)



NATURAL PEBBLE SLIGHTLY USED AS GRINDER

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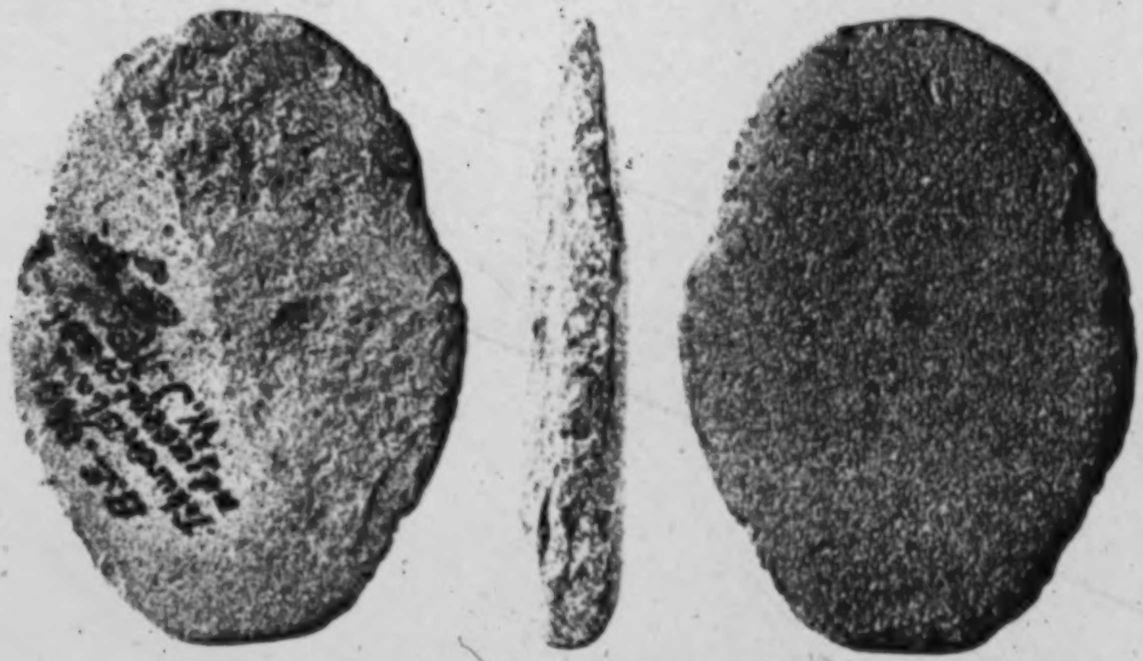
412

1: McGee E-5 (1894-1895)1896 NU31 Seri NU31

[p246 B]



NATURAL PEBBLE SLIGHTLY USED AS DOMESTIC IMPLEMENT

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and discarded hupfs, a broken fictile figurine, etc), was the still ruder 172
arrowpoint represented in figure 37b (both figures are natural size).
The specimens are nearly identical in material—a jet-black slaty rock 411
with a few lighter flecks interspersed, weathering gray on long exposure (as is shown by the partly natural surface of the larger point); similar rock abounds in several easterly spurs of Sierra Seri. The smaller specimen was evidently finished and used; its features indicate fairly [324]
skilful chipping, though its general form is crude—in addition to the asymmetric shouldering, the entire point is curved laterally in such manner as to interfere with accurate archery. The larger specimen is still more strongly curved laterally, and the chipping is childishly crude; while the rough surface, clumsy tang, and unfinished air indicate that it was never used even to the extent of shafting. It is possible that the specimens may have been imported by aliens, but the probabilities are strong that they were manufactured by the Seri. No other arrowpoints and no chips or spalls suggesting stone arrow-making were found in all Seriland, though the entire party of twelve were on constant lookout for them for a month. The natural inference from these facts is that the ancestral Seri, like their descendants, were not habitual stone arrow-makers.

There is a final category of Seri artifacts which would be classed as
distinctive by Caucasians on the basis of material, though they are 177
combined with the stone artifacts by the tribesmen; it comprises arrow- 325
points of hoop-iron or other metal, harpoon-points of nails, spikes, or
wire, awls of like materials, and other metallic adjuncts to ordinary [411]
implements. The use of iron is of course post-Columbian, and its ordinary sources are wreckage and stealage. The date of introduction is unknown, and probably goes back to the days of Cortés and Mendoza; certainly the value of metal was so well understood in 1709 that when Padre Salvatierra's bilánder was beached in Seriland the tribesmen at once began to break her up for the nails (ante, page 67); yet the metal is wrought cold and only with hupf and ahst like the local materials, and is habitually regarded and designated as a stone. By reason of the primitive methods of working, the metals are of course available only when in small pieces or slender shapes. There is a tradition among the vaqueros of the frontier that a quantity of hoop-iron designed for use in making casks was carried away from a rancheria in the vicinity of Bacuachito during a raid in the seventies, and that this stock has ever since served to supply the Seri with material for their arrowpoints; but it is probable that the chief supply is derived from the flotsam swept into the natural drift trap of Bahia Kunkaak by prevailing winds and tidal currents, and cast up on the long sandspit of Punta
Tormenta after every storm. A surprising quantity and variety of 177
wreckage was found on this point, and thence down the coast to Punta 502
Narragansett, by the 1895 expedition: staves and heads of casks broken up after beaching, a telegraph pole crossbar which had evidently

177 brought in a cargo of large wire, and a piece of door-frame with heavy strap-iron hinges attached with screws, were among the troves of the 502 tribesmen within a few weeks; and it was noted that while even the hinge screws and the tacks attaching tags to the cask-heads had been extracted by breaking up the wood, the roughly forged hinges of 2 by ⅜-inch wrought iron had been abandoned after a tentative battering with cobbles, and lay among the refuse stones about the jacales.

412 A rough census of the stone implements of Seriland is not without interest, even though it be no more than an approximation. Some 20 or 25 habitable and recently inhabited jacales were visited, with about twice as many more in various stages of ruin, fully two-thirds of these being on the island; and at least an equal number of camps or other houseless sites were noted. About these 150 jacales and sites there were, say, 50 shets, ranging from nearly natural bowlders to the comparatively well-wrought specimen illustrated in plate XXXIX, and an equal number of cobbles used interchangeably as shets and hupfs; there were also 200 or 300 pebbles bearing traces of use as hupfs, of which about a third were worn so decidedly as to attest repeated if not regular use; while no flaked or spalled implements were observed save the two doubtful examples illustrated in plates XLVII and L, and only two chipped arrowpoints. It may be assumed that the sites visited and the artifacts observed comprise from a tenth to a fifth of those of all Seriland, in addition to, say, 75 finished hupfs habitually carried by Seri matrons in their wanderings; and it may be assumed also that 50 or 100 metallic harpoon-points and several hundred hoop-iron arrowpoints are habitually carried by the warriors and their spouses.

[324] The most impressive fact brought out by this census is the practical absence of stone artifacts wrought by flaking or chipping in accordance with preconceived design; excepting the exceedingly rare arrowpoints there are none of these. And the assemblage of wrought stones demonstrates not merely that the Seri are practically without flaked or chipped implements, but that they eschew and discard stones edged by fracture whether naturally or through accident of use.

Summarily, the Seri artifacts of inorganic material fall into three groups, viz: (I) The large and characteristic one comprising regularly-used hupfs and shets, with their little-used and discarded representatives; (II) the small and aberrant group represented by chipped arrowpoints, and (III) the considerable group comprising the cold-wrought metal points for arrows and harpoons and awls—though it is to be remembered that the Seri themselves combine the second and third of these groups.

I. On reviewing the artifacts of the larger group it becomes clear (1) that they immediately reflect environment, in that they are characteristic natural objects of the territory; (2) that they come into use as implements through chance demands not by hasty selection from the

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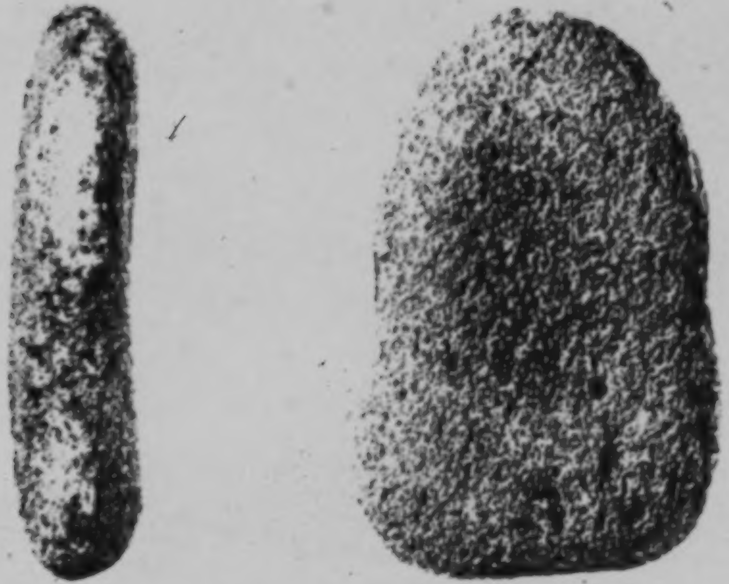
1: McGee E-S (1894-1895)1898 NU31 Seri NU31

[p 248 A]



NATURAL PEBBLE SLIGHTLY WORN BY USE

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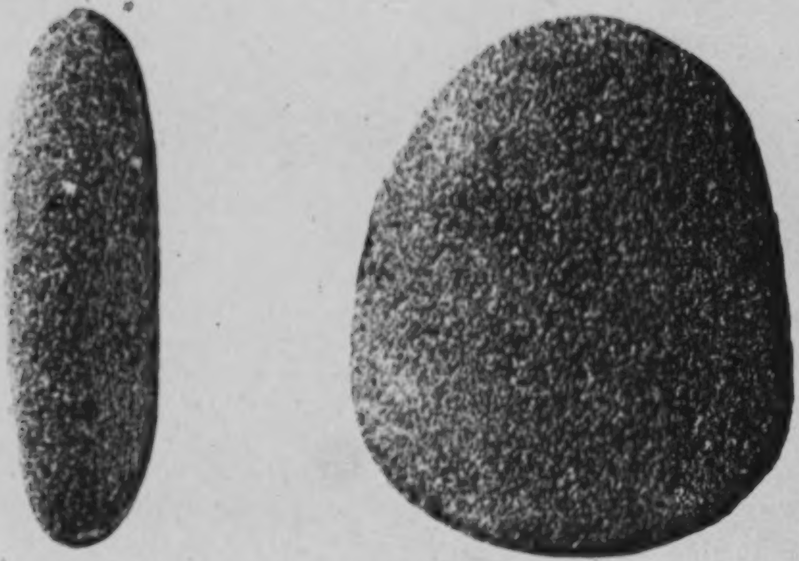
[p.248 B]



NATURAL PEBBLE CONSIDERABLY WORN IN USE AS GRINDER abundant material; (3) that the great majority of the objects so employed are discarded after a use or two; (4) that when the object 412 proves especially serviceable, and other conditions favor, it is retained to meet later needs; (5) that the retained objects are gradually modified in form and surface by repeated use; (6) that if the modification diminishes the serviceability of the object in the notion of the user (e. g., by such fracture as to produce sharp edges), it is discarded; (7) that if the modification enhances the serviceability of the specimen in the mind of the user it is the more sedulously preserved; and (8) that through the instinctive desire for preservation, coupled with the thaumaturgic cast of primitive thinking, the object acquires at once an artificialized form and a fetishistic as well as a utilitarian function. The significant feature of the development is the total absence of foresight or design, save in so far as the concepts are fiducial rather than technical or directly industrial.

II. On reviewing the almost insignificantly small group of chipped 177 stone artifacts, it seems clear that while the material is local the design is so incongruous with custom and characteristic thought as to 324 raise the presumption that stone-chipping is an alien and imperfectly assimilated craft. The conspicuous and significant feature of the chipped stone artifact is the shapement in accordance with preconceived design.

III. On reviewing the arbitrarily separated group of metallic artifacts it is found clear (1) that the material is foreign; (2) that it is 177 avidly sought and sedulously saved and utilized; (3) that it is wrought 325 only by the crude methods used for fashioning the most primitive of 412 implements and tools; and (4) that it is used chiefly as a substitute for organic substances employed in symbolic imitation of the natural organs and functions of animals. The significant features of the use of iron artifacts are (*a*) the absence of either alien or specialized designs, and (*b*) the mimicry of bestial characters as conceived in primitive philosophy.

Classed by material and motive jointly, the three groups are diverse 412 in important respects: The first is local in material, local in motive; the second is local in material, *foreign* in design; the third is *foreign* in material, local in motive.

On recapitulating the several phases of Seri handicraft, the devices 000 are found to fall into genetic classes of such sort as to illumine certain notable stages of primitive technic.

The initial class comprises teeth, beaks and mandibles, claws, hoofs, and horns, used in imitation or symbolic mimicry of either actual or imputed function of animals, chiefly those to which the organs pertain, together with vegetal spines and stalks or splints, used similarly under the zootheistic imputation of animal powers to plants; also carapaces and pelts, used as shields combining actual and symbolic protective functions. While this class of devices is well displayed by the Seri, it is by no means peculiar to them; clear vestiges of the devices have

000 been noted among many Amerind tribes. Now the essential basis of the industrial motive has been recognized by all profounder students in zootheism, animism, or hylozoism—indeed, the industrial stage is but the reflex and expression of the zootheistic or hylozoic plane in the development of philosophy; while both the devices and the cultural stage which they represent have already been outlined by the late Frank Hamilton Cushing, on the basis of surviving vestiges and prehistoric relics, and characterized as "prelithic".[1] Cushing's designation for the initial stage of technic has the merit of euphony, and of suggesting the serial place of the stage in industrial development; but since it denotes a most important class of artifacts only by exclusion and negation it would seem desirable to supplement it by a positive term. The class of devices (considered in both material and functional aspects) and the cultural stage in general might appropriately be styled hylozoic, though it would seem preferable to emphasize the actual objective basis of the class and stage by a specific designation—and for this purpose the term *zoomimetic* (from ζῷον, τό and μιμητικός), or its simplified equivalent, *zoomimic*, would seem acceptable.

A transitional series of devices is represented by awls of wood or iron fashioned in imitation of mandibles or claws, by wooden foreshafts shaped in symbolic mimicry of teeth, and by other vicarious replace-

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[1] The Development of Form and Function in Implements; an unpublished paper presented before the British Association for the Advancement of Science at the Toronto meeting in 1897. A brief abstract, revised by the author of the paper, was printed in the American Anthropologist, vol. x, 1897, pp. 355–356; and in the absence of full authorial publication, the more strictly germane passages of the abstract are worthy of quotation: "Beginning with the semiarboreal [human] progenitor indicated jointly by projecting forward the lines of biotic development and projecting backward the lines of human development, Mr Cushing undertook to trace hypothetically, yet by constant reference to known facts, (1) the genesis of artificial devices, and (2) the concurrent differentiation of the human brain and body in the directions set forth by Sir William Turner; and he gave special force to his exposition by frequent reference to commonly neglected characteristics, physical and psychic, of young infants. He pointed out that the prototype of man, whether infantile or primitive, is a clumsy ambidexter, the differentiation of hand and brain remaining inchoate; that one of the earliest artificial processes is a sawing movement, in which, however, the object to be severed is moved over the cutting edge or surface, and that the infant or savage at first selects sharp objects (teeth, shells, etc) as cutting implements, and only after long cultivation learns to make cutting implements of stone; this early stage in development he called *prelithic*. Passing, then, to the age of stone, he showed that this substance is first in the form of natural pebbles or other pieces for hammering, crushing, braining, and as a missile. That in time the user learns that the stone is made more effective for severing tissues by fracturing it in such way as to give a sharp edge, the fracture being originally accidental and afterward designed; yet that for a long time it is the hammerstone that is fractured and not the object against which the blows are directed. In this stage of development (called *protolithic*, after McGee) stone implements come into more or less extended use in connection with implements of shell, teeth, etc; yet the implements are obtained by choice among natural pieces and by undesigned improvement of these through use. The next stage is that of designed shaping through fracture by blows from a hammerstone, followed by intentional chipping. This may be regarded as the beginning of paleolithic art, and also marks the beginning of dexterity and the activital differentiation of the hands. Incidentally the author brought out the importance of that concept of mysticism which is found of so great potency among infantile and primitive minds, in such manner as to suggest the genesis, and the obscure reasons for the persistence of this phase of intellectuality; for the inchoate imagination is able to expand only in the direction of mystical explanation, so that fertility in primitive invention seems to be dependent on appeal to the mysterious powers of nature. At first the mystery pervades all things, but in time it is largely concentrated in animate things; then animate powers are imputed, *e.g.*, to physical phenomena. So to the infant or race-child fire is a mystical animal or demon which, in prelithic or protolithic times, must have been at first tolerated, then fed with fuel and punished with water and eventually subjugated and tamed, much as the real animals were afterward brought into domestication."

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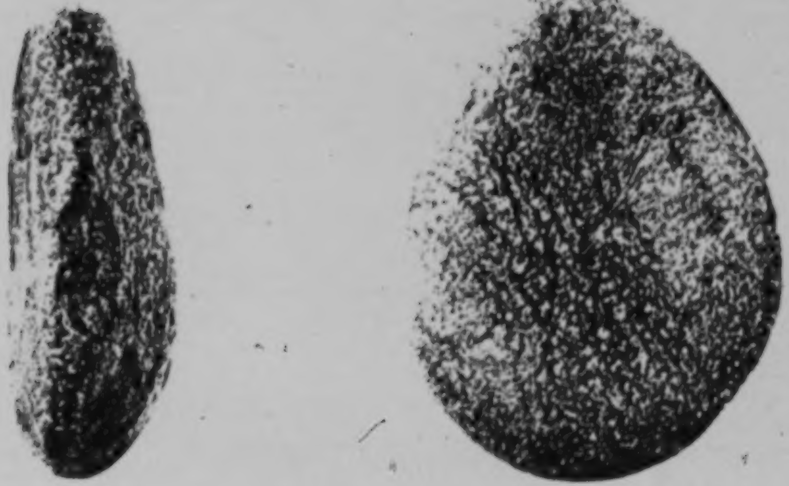
1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

[FACING P. 251]



NATURAL PEBBLE CONSIDERABLY WORN AS CUTTER AND GRINDER

THE HELIOTYPE PRINTING CO. BOSTON

ments of material in devices of zoomimic motive; but this series may be regarded as constituting a subclass, or as a connecting link between classes rather than a major class of devices. Yet the subclass is of great significance as a mile-mark of progress in nature-conquest, and as the germ of that industrial revolution consummated as tribesmen grew into reliance on their own acumen and strength and skill rather than on the capricious favor of beast-gods.

The next major class of devices comprises shells and cobbles and bowlders picked up at random to meet emergency needs, wielded in ways determined by emergency adjustment of means to ends, and sometimes retained and reused under the budding instinct of fitness, though never shaped by design. The devices of this class are best exemplified by the tool-shells and by the hupfs and ahets of the Seri matrons, partly because of the practical absence of higher artifacts from their territory; yet the class is by no means confined to this notably primitive folk: the greater part of the implements used by the California Indians and a large part of those used by every other known Amerind tribe in aboriginal condition consist of shore cobbles, river pebbles, talus bowlders, or other natural stones of form and size convenient for emergency use; and (despite the fact that such objects are often ignored by observers, for the prosaic reason that they represent no familiar or trenchant class), there is no lack of evidence that they are or have been in habitual use among all primitive peoples. Although zootheistic or sortilegic motives doubtless play an undetermined rôle in the selection of the objects, and although wonted zoomimic movements doubtless affect the initial processes, the essential distinction from zoomimic artifacts resides in the selection and use of natural objects through a mechanical chance tending to inspire volitional exercise rather than through a fiducial rule tending to paralyze volitional effort; while the class is no less trenchantly separable from those of higher grade by the absence of preconceived models or technical designs. The class of devices and the culture-stage which they represent have already been outlined and defined as *protolithic*.[1]

A transitional series of devices allied to the Seri hupf on the one hand and to the chipped artifact on the other hand is frequently found among the aborigines of California and other native tribes; it is typified by a cobble or other natural piece of stone cleft (first by accident of use and later by design) in such wise as to afford an edged tool. This subclass of artifacts is religiously eschewed by the Seri; but it is of much interest as an illustration of the way in which artificialization proceeds, and of the exceeding slowness of primitive progress.

The third great class of devices defined by technologic development comprises stones chipped, flaked, battered, ground, or otherwise wrought in accordance with preconceived designs, together with cold-forged native metal, horn, bone, wood, and other substances wrought

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[1] American Anthropologist, vol. IX, 1896, pp. 317-318.

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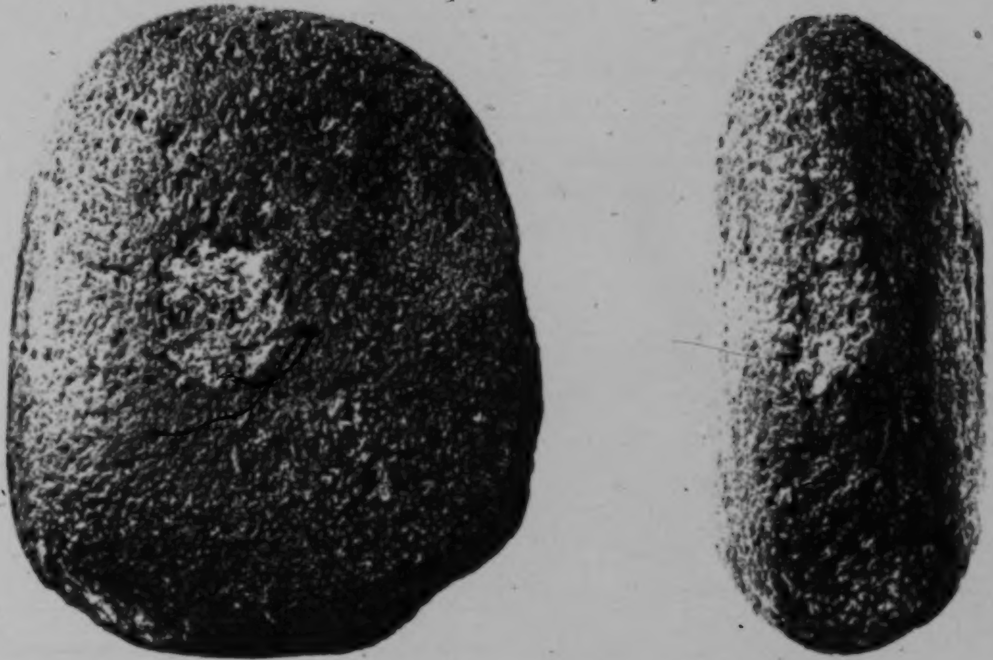
[FACING P. 252]

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31



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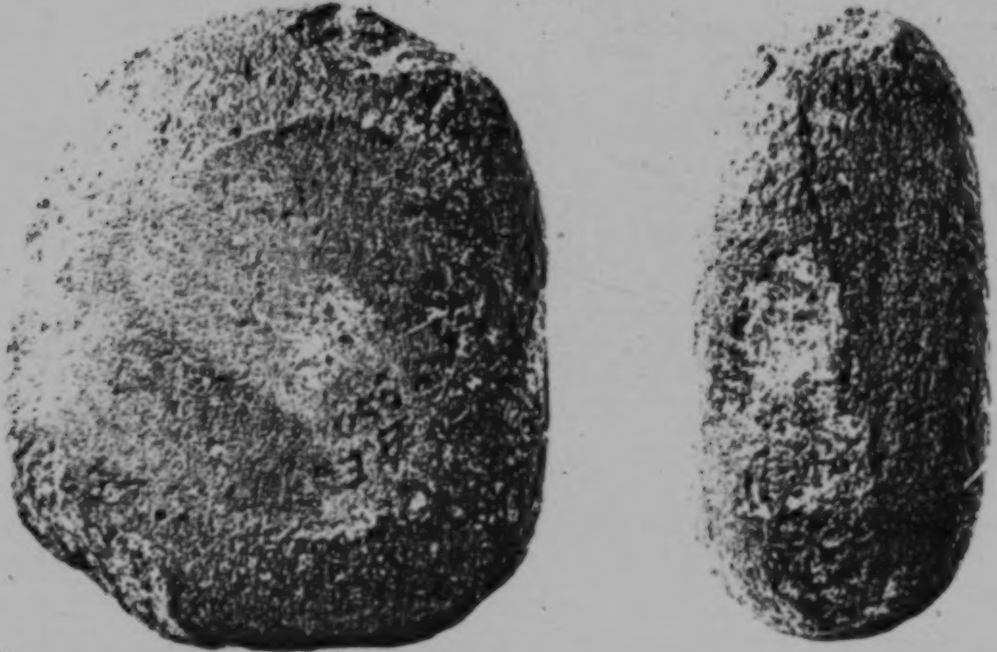
NATURAL PEBBLE CONSIDERABLY USED AS HAMMER, GRINDER, AND ANVIL (TOP AND EDGE)

412

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

(p.258)



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NATURAL PEBBLE CONSIDERABLY USED AS HAMMER, GRINDER, AND ANVIL (BOTTOM AND EDGE)

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in accordance with preconceived models and direct motives. Among the Seri this class of devices is represented only by the rare arrowpoints of chipped stone, which seem to be acultural and largely fetishistic; but the class is abundantly represented by the artifacts of most of the Amerind tribes. The class and the cultural stage have already been outlined under the term *technolithic*.[1]

A transitional series of devices intervenes between stone artifacts and artifacts of smelted metal; it is represented by malleable native metals (chiefly copper, silver, meteoric iron, and gold), originally wrought cold, after the manner of stone, though heating under the hammer in such wise as to prepare the way for forging, fusing, and founding. These devices and the processes with which they are correlated are not represented among the Seri; indeed, the crude use of iron by the tribe would seem to lie on a lower plane in industrial development than even the arrowpoint-chipping, in that the artifacts, though of foreign material, are wrought largely in accordance with zoomimic motives.

The fourth major class of devices, comprising the multifarious artifacts of smelted and alloyed metal, was barely represented in aboriginal America; only a few of the more advanced tribes had attained the threshold of metallurgy, and even among these the crude metal working remained hieratic or esthetic, and did not displace the prevalent stone craft.

Briefly, the several stages in the development of tools and implements may be seriated as follows:

Stages	Typical materials	Typical products	Essential ideas
1. Zoomimic	Bestial organs	Awls, spears, harpoons, arrows.	Zootheistic faith.
A. Transitional	Symbolized organs	Piercing and tearing implements.	Faith + craft.
2. Protolithic	Natural stones	Hammers and grinders—hupfs and ahsts.	Mechanical chance.
B. Transitional	Cleft stones	Grinders and cutters	Chance + craft.

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[1] Annual Report of the Smithsonian Institution for [illegible], pp. [illegible]. The long extant and well-known classification of stone artifacts as "paleolithic" and "neolithic" may not be overlooked. This classification was based originally on prehistoric relics of Europe, and it served excellent purpose in distinguishing finely finished stone implements from those of rudely chipped stone; but both classes of artifacts were shaped in accordance with preconceived design, and hence both belong to the technolithic class as herein defined. It may be added that the classification was made with little if any reference to primitive thought, was not based on observation among primitive peoples, and has not been found to apply usefully to the aborigines and aboriginal artifacts of America, where the representative tribe or prehistoric village site is characterized by implements of both "paleolithic" and "neolithic" types which intergrade in such manner as to prove contemporaneous manufacture and interchangeable use; while the preponderance of polished-stone implements is generally indicative of simpler rather than of more advanced culture.

Stage	Typical materials	Typical products	Essential idea
3. Technolithic	Artificialized stones.	Chipped, battered, and polished implements.	Designed shapement by molar action.
C. Transitional	Malleable native metals.	Copper celts, gold ornaments, etc.	Designed shapement by molar action + chance heating.
4. Metal	Smelted ores	Steel tools, etc......	Shapement by molar and molecular action.

It is to be realized that the successive stages represent characteristic phases of normal and continuous growth, and hence that their relations are intimate and complex. The fundamental factor of the growth is intellectual advancement, and hence in actual life each stage is at once the germ and the foundation for the next higher; each stage is characterized by a type or a cognate series of types, yet each commonly contains a few forms prophetic of the next stage and many forms vestigial of the earlier stages; so that the stages are to be likened unto successive generations of organisms, or (still more appropriately) to the successive phases of ovum, larva, pupa, and imago in the ontogeny of the insect rather than to the arbitrary classes of pigeonhole arrangements. The complex relations conceived to exist among the stages can be indicated more clearly by diagraphic representation than by typographic arrangement, and such a representation is introduced as figure 38. The successive curves in the diagram express the rhythmic character of progress and the cumulative value of its interrelated factors, as well as the dominance of successive types until gradually sapped and absorbed (though not immediately or completely annihilated) by higher types reflecting a strengthened mentality.

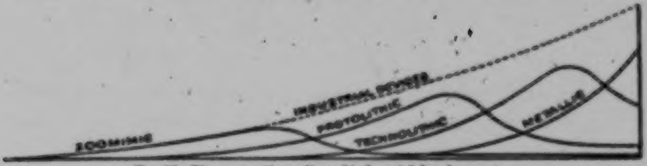

Fig. 38—Diagrammatic outline of industrial development.

The place of the normal pacific industries of the Seri in this genetic classification of human technic is definite. The Seri craft combines the features of the zoomimic and protolithic stages more completely than that of any other known folk, and in such wise as to reveal the relations

000 between these stages and that next higher in the series with unparalleled clearness; their craft also displays an aberrant (and hence presumptively acultural) feature pertaining to the technolithic stage; and in so far as their craftsmen use the material typical of the age of metal they degrade it to the transitional substage between dominant zoomimicry and designless stone-using.

Viewed in the general light of their pacific industries, the Seri are, accordingly, among the most primitive of known tribes; their technic is in harmony with their esthetic, and also with their somatic and tribal characteristics, in attesting a lowly plane of development; while their industries, like their other demotic features, are essentially autochthonous.

WARFARE

175 721 Something is known of Seri warfare through the history of the centuries since 1540, and especially through the bloody episodes of the Encinas régime and the occasional outbreaks of the last decade or two. The available data clearly indicate that the warfare of the tribe complements their pacific industries in every essential respect.

As befits their primitive character, warfare has played an important rôle in the history of the folk, forming, indeed, one of the chief factors in determining the course of tribal development. There is no means of estimating the losses suffered and occasioned in warfare with the neighboring tribes during either prehistoric or historic times; but the indications are that they were much greater than the losses connected with Caucasian contact. Neither is it practicable to estimate reliably the fatalities attending the interminable conflicts with the Spanish invaders and their descendants, though it is safe to say that the Seri losses in strife against Spaniards and Mexicans aggregate many hundred, and that the correlative loss on the part of their enemies reaches several score, if not some hundred, lives. Few if any other aboriginal tribes of America have had so sanguinary a history as the Seri, and none other has at once so long and so bloody a record.

411 According to the consistent accounts of several survivors of conflict with the Seri, their chief weapons are arrows, stones, and clubs—though several survivors manifest greater fear of the throttling hands and rending teeth of the savage warriors than of all their artificial weapons combined. A striking feature of the recitals, indeed, is the rarity of reference to weapons; the ambushes or surrounds or chance meetings, with their disastrous or happy consequences, are commonly described with considerable detail; the carbines or rifles, the machetes and knives, or the deftly thrown riatas employed by the rancheros or vaqueros are mentioned with full appreciation of their serviceability; but the ordinary expressions concerning the despised yet dreaded Seri are precisely those employed in recounting conflicts with carnivorous beasts. When Andrés Noriega's kinswoman proudly related how he

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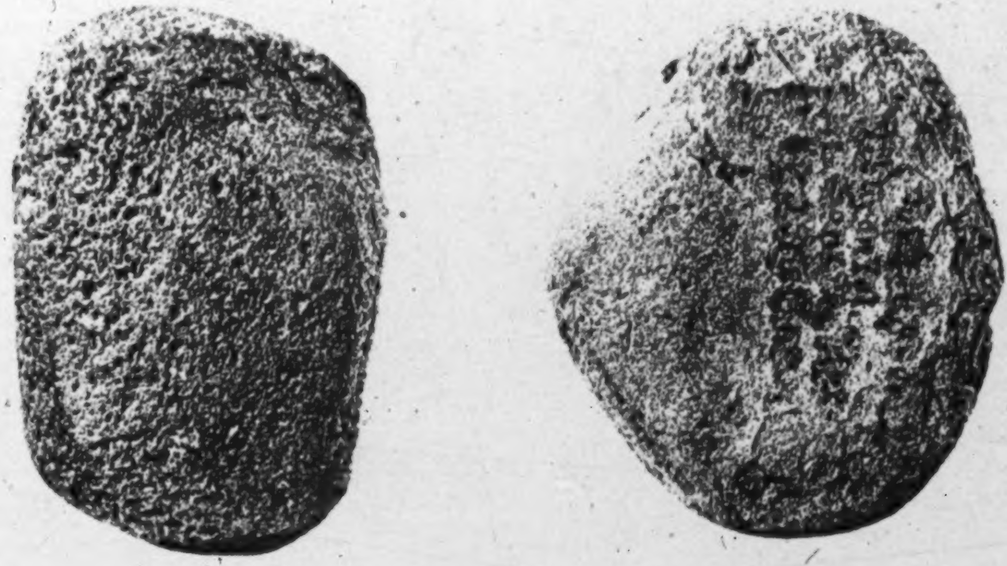
(Cp.254A)

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31



HAMMER AND GRINDER

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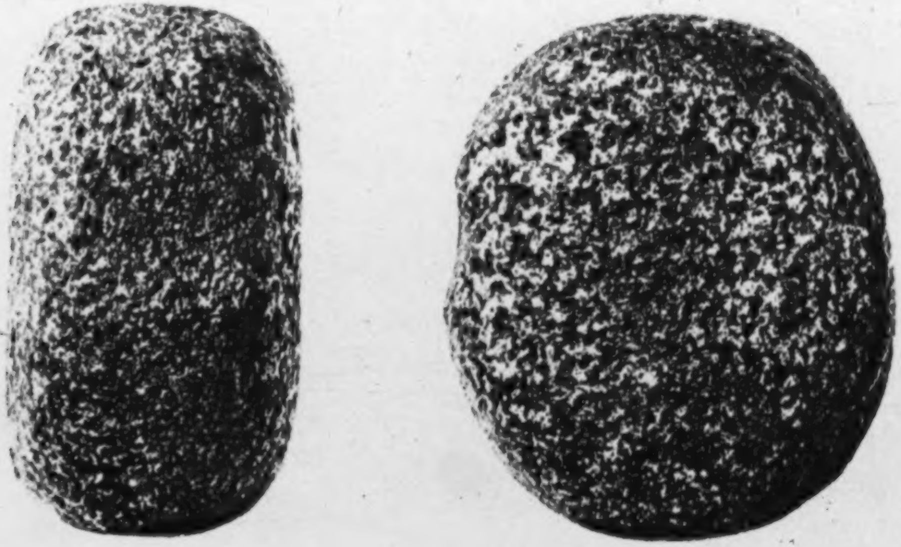
1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

[p.254 a]



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IMPLEMENT SHAPED BY USE

411

alone once overawed and routed an attacking party of 30 Seri warriors, she duly mentioned the carbine ready for use in his hands and the six-shooter and machete in his belt; but nothing was said of the Seri weapons. When a distinguished sportsman citizen of Caborca, the local authority on the Seri, sought to dissuade the 1895 expedition from visiting Tiburon, he was repetitively and cumulatively emphatic in his oracular forecast, "Ils vont vous tuer! *Ils vont vous tuer!!* ILS VONT VOUS TUER!!!"—yet he made but passing reference to "poisoned" arrows, and none to other weapons, in the general implication that invaders of the tribal territory were torn limb from limb and strewn over the rocks and deserts of Seriland. When Jesus Omada, of Bacuachito, boasted his Seri scars, he indeed emphasized the arrow-mark on his breast, but only as a prelude and foil to the far ghastlier record of his teeth-torn arm. When Robinson and his companion were butchered on Tiburon in 1894, the bloody work was effected chiefly by means of a borrowed Winchester; and neither the account of the survivors nor that of the actors made mention of native weapons—save the stones with which the second victim was finished according to the local version. In short, most of the casual expressions and fuller recitals alike indicate that while the Seri are famous fighters their weapons—except the much-dreaded "poisoned" arrows—are incidents rather than essentials to savage assaults, and that their prowess rests primarily on bodily the strength and swiftness.

The stones used in battle, as described by the survivors and as intimated by Mashém, are cobbles as large as a fist, i. e., hupfs of typical form and size. So far as is known they are never hurled, slung, nor projected in any other manner, nor are they hafted or attached to cords after widespread aboriginal customs; they are merely held in the hand, as in the slaughter of quarry. Hardy made note of a war-club—"They use likewise a sort of wooden mallet called Macána, for close quarters in war";[1] but nothing of the kind was found at Costa Rica in 1894, and no woodwork suggesting such use was found in the depths of Seriland in 1895.

The most conspicuous and doubtless the most effective war weapon is the arrow projected from the bow in the unusual if not unique fashion already noted (ante, p. 201). There is nothing to indicate that the Seri are especially effective archers; the facts (1) that a large part of the arrows are pointless, save for the hard-wood foreshafts; (2) that stone arrowpoints are not habitually used; and (3) that comparatively slight reference is made to the use of arrows in records and recitals of Seri battles, tend on the contrary to indicate inferior ability in archery. And in the course of the explorations by the 1895 expedition it was noted that the feral fowls and animals of Seriland—pelican, gull, snipe, curlew, cormorant, coyote, hare, bura, mountain sheep, peccary, etc—displayed little fear of human figures at distances exceeding 75 yards,

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[1] Travels, p. 290.

411 and seldom stirred until the stranger approached within 50 or 60 yards; whence it may be assumed that those distances fairly indicate the ordinary range of Seri arrows. The few accounts of conflicts in which arrows are mentioned prove, however, that those missiles are discharged with great rapidity and in considerable numbers during the brief interval to which the fighting is customarily limited.

The most notorious feature of the Seri warfare, and that of deepest
278 interest to students, is the reputed use of poisoned arrows. The scat-
411 tered literature of the tribe, from the days of Coronado onward, abounds in references to this custom; the Jesuit authorities give somewhat varied yet fairly consistent descriptions of the preparation and the effects of these arrows; Hardy added his testimony as to the character of the poison; General Stone gave directly corroborative evidence; haciendero Encinas gives witness to the effects of the envenomed missiles on his own stock; while Mashém recounted to the 1894 expedition the various uses of the "poisoned" arrows and highly extolled their potency, though he was noncommittal—save in casual allusions—as to the details of the poisoning. A part of the arrows acquired by this expedition and now preserved in the National Museum were professedly poisoned; they are easily distinguished by a thin varnish of gummy and greasy substance over the iron tips and wooden foreshafts, and especially about the attachments of mesquite gum and sinew. According to Mashém's asseverations, such arrows are habitually used in war save when the supply is exhausted by continued demand; they are also used occasionally in hunting, especially for deer and lions (i. e., the swiftest and fiercest game of the region); and the use of the poisoned missile does not destroy the meat of the animal, though the portion immediately about the wound is "thrown away". Two of the treated arrows brought back from Costa Rica were submitted to
[126] Dr S. Weir Mitchell some months afterward for examination, and for identification of any poisonous matter found on them; but no poison was detected. On the whole, the data concerning the reputed arrow poisoning are less definite than might be desired; yet they are sufficient to suggest the nature of the custom with considerable clearness.

In any consideration of Seri customs it is to be realized that the
279 folk are notably primitive in thought, and hence deeply steeped in that
[811] overweening mysticism which dominates all lowly folk—that they still cling to zoomimic motives in their simple handicraft, and are still wholly within zootheism in their lowly faith. In the light of this realization the numerous consistent records of the preparation of the poison are easily interpreted, and are found to be fully in accord with the prevailing motives of the tribe; and the interpretation serves to explain the somewhat discrepant accounts of the effects of the poison, effects ranging from nil to horrible sepsis. According to the more circumstantial recipes, the first constituent of the poison is a portion of lung, preferably human—a selection readily explained by pristine philosophy,

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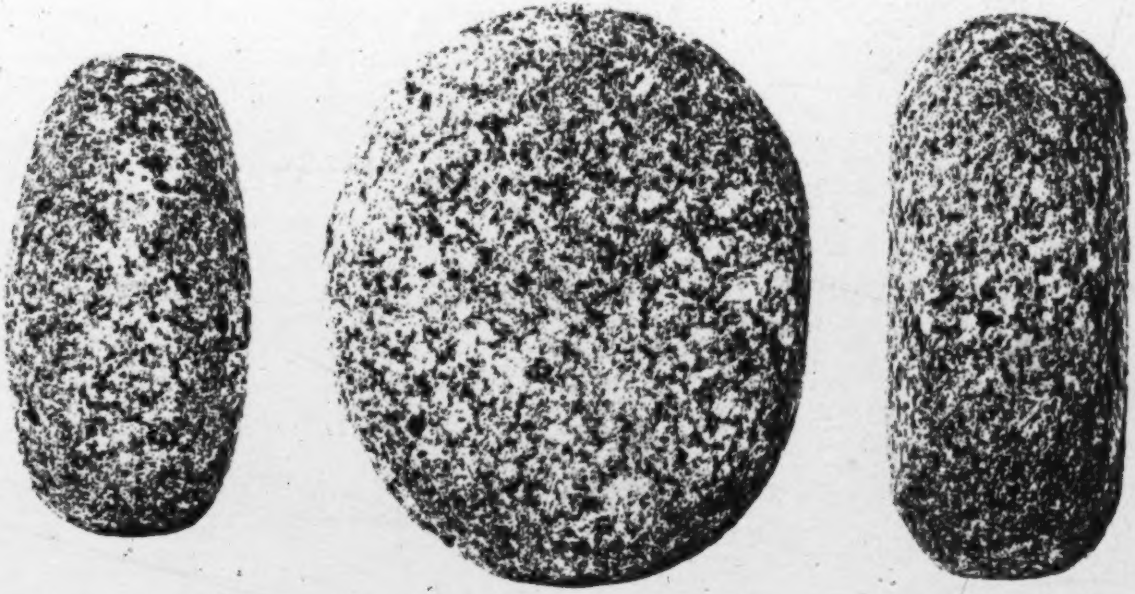
1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

[p. 256 A]



IMPLEMENT PERFECTED BY USE

THE HELIOTYPE PRINTING CO., BOSTON

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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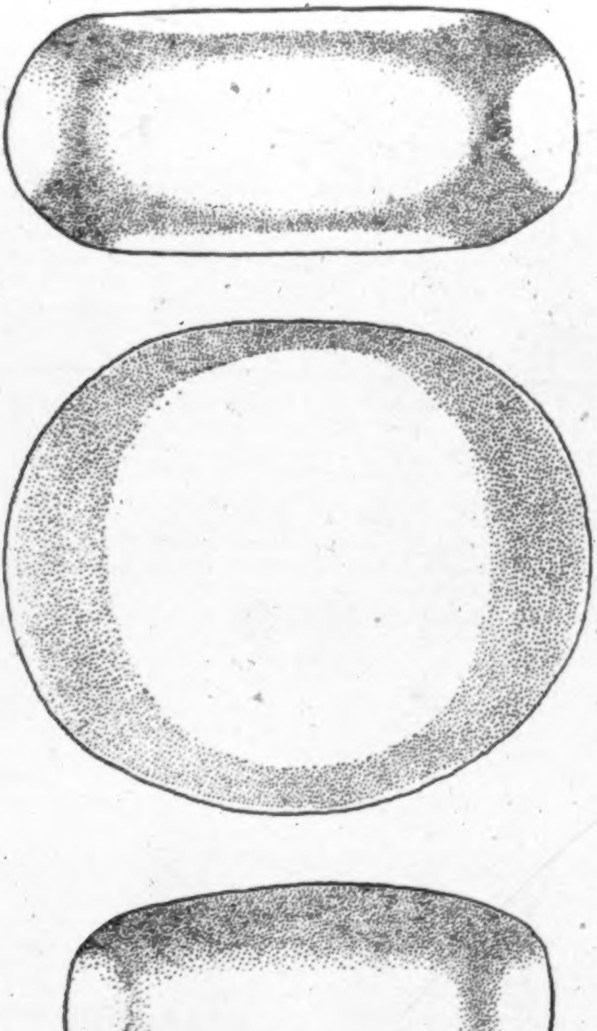

[p.256 B]

in which the breath is life, and the lungs at once the seat and the 278 symbol of vitality. Naturally the fleshly symbol is from a dead body; and just as the lung denotes vitality in life, so (in primitive thought) it denotes an emphasized, as it were an incarnated, antithesis of vitality in death. Next, as the recipes continue, this death-symbol is exposed to the most potent agencies of death—to the bites of maddened rattlesnakes, to the stings of irritated scorpions, to the venomed trailings of harried centipedes. Then the deadly creatures are themselves killed, and the fanged heads of the serpents, the stinging tails of the scorpions, and the fiery feet of the centipedes, together with portions of redolent ordure from the grave-cairns, and other symbols of death and decay are crushed and macerated with the mass in a wizard's brew, grewsome beyond the emasculated and degraded witch's broth of medieval times. Finally, the grisly mess is allowed to simmer in a stinkpot[1] shell under the fierce desert sun until its ripeness and putrid potency are attested by the rank fetor of death; when it is ready for its ruthless use. Thus the entire recipe is thaumaturgic in concept, necromantic in detail; it represents merely the malevolent machinations of the medicine man seeking success by spells and enchantments; it stands for no rational system of thought or practice, but pertains wholly to the plane of shamanism and sorcery. So interpreted the recipe is readily understood; the several witnesses who have independently obtained it are justified, and Mashém's details and unwilling intimations are made clear—especially if the sacrificed flesh about the wound in deer or lion be deemed an oblation, such as primitive folk are given to making.

While thus the motive of the medicine-man in compounding his loathsome mess is wholly necromantic, serious consequences of its use must occasionally supervene; and though these may be incidental so far as the philosophy is concerned, they may tend reflexly toward the perpetuation of the custom. In the course of the preparation of the charm-poison, and especially in the final ripening process, morbific germs and ptomaines must be developed; these may retain their virulence up to the time of use, particularly when a batch of poison is prepared for a special occasion and the arrows are used while the application is still fresh; and in such cases the wound might initiate septicemia of the sort described in Castañeda's early narrative and still more clearly displayed by Señor Encinas' saddle-horse (ante, p. 112). Naturally the incidentally zymotic varnish frequently fails of effect, and can hardly be expected to remain morbific long enough to be detected in laboratory experiments; yet it is probable, as attested by Mashém's guarded expressions, that the occasionally terrible results of such poisoning are within the ken of the Seri shamans.

It is noteworthy that the various early accounts of the Seri arrow- 114 poisoning are strikingly consistent, though sufficiently diverse to 279

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[1] Cinosternum sonoriense (?).

278 [114] attest independence in origin; it is also noteworthy that several of the accounts are given hesitatingly and half qualifiedly, with alternative references (obviously hypothetical) to vegetal sources of poison. Thus the author of "Rudo Ensayo" qualified a characteristic (though brief) account of the preparation of the poison by adding: "But this is mere guesswork, and no doubt the main ingredient is some root."[1] So, too, Hardy described the compounding of the brew in much detail, adding the significant statement that "when the whole mass is in a high state of corruption the old women take the arrows and pass their points through it"; yet he could not resist the alternative hypothesis, and added: "Others again say that the poison is obtained from the juice of the yerba de la flécha (arrow-wort)."[2] Bartlett "was told that the Ceris tip their arrows with poison; but how it was effected I [he] could not learn," and so he contented himself with quoting Hardy's account.[3] Stone gave the recipe in fairly similar terms, adding that the morbific mass is hung up "to putrefy in a bag, and in the drippings of this bag they soak their arrowheads"; and he gave a characteristic account of the effect of a wound from a poisoned arrow on a human subject (ante, p. 100). Pajeken independently attested the virulence of the poison, and described the consequences of a slight wound suffered by his horse (ante, p. 101), while Pimentel gave independent corroboration, and Orozco y Berra added the further information that the proverbially deadly poison is fortified "by superstitious practices" (ante, p. 103). Bancroft gave currency to the customary recipe, and also to the complementary hypothesis that the "magot" may be the source of the poison; while Dewey merely mentioned the reputed use of poisoned arrows. Like their predecessors, the vaqueros of today are familiar with the tradition of a necromantic brew; but many of them—like Don Jesus Omada, of Bacuachito, and Don Ramon Noriega, of Pozo Noriega—display a much more lively interest in the local yerba mala, or yerba de flécha, of which they stand in such mortal dread that they can hardly be induced to approach a clump of it, and which they conceive must add the final crux to the brew. This plant was described in "Rudo Ensayo": "Mago, in the Opata language, is a small tree, very green, luxuriant, and beautiful to the eye; but it contains a deadly juice which flows upon making a slight incision in the bark. The natives rub their arrows with it, and for this reason they call it arrow-grass; but at present they use very little."[4] Elsewhere the anonymous author mentions the use of (presumably) this poison by the Jova, and describes it as "so deadly that it kills not only the wounded person, but also him who undertakes the cure by sucking the wound, as is customary with all the Indians"; the description implying that the infection is irremediable.[5] Yet he apparently discriminated this poison from that of the Seri, for which another plant known as caramatraca

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[1] Op. cit., p. [illegible]; cf. ante, p. [illegible].

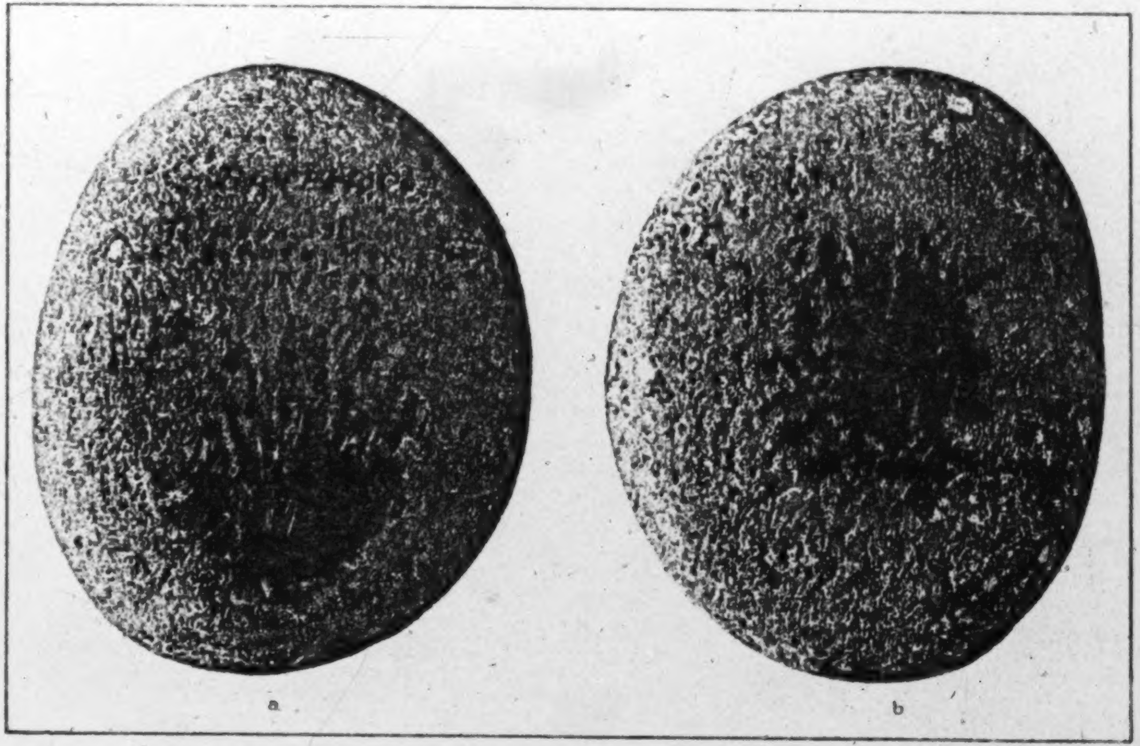
[2] Travels, p. [illegible]; cf. ante, p. [illegible].

[3] Personal Narrative, p. [illegible].

[4] Op. cit., p. [illegible].

[5] Op. cit., pp. [illegible].

[Facing p. 259]



PERFECTED IMPLEMENT FOUND IN USE

is an infallible remedy. On the whole it seems probable that the yerba mala (*Sebastiano bilocularis?*), or yerba de flécha, or mago, or magot, 278 yielded or formed the standard arrow-poison of the Opata and perhaps [171] of other Indians, and that the ill-repute of the shrub survived and spread throughout Mexicanized Sonora in such frequent repetition and common belief as to affect the ideas of residents and travelers alike; but it seems equally probable that the magic-inspired brew of the Seri is entirely distinct.[1]

As suggested by widespread primitive customs, and as illustrated specifically by the arrow-charming, the warfare of the Seri is largely 224 sortilegic, this feature being but an extension and magnification of a corresponding feature of their hunting customs. The economic object of the chase is, of course, the flesh of the quarry; but the hunt normally begins with invocatory or other fiducial ceremonies, culminates in a feast opened with oblations, and ends in the use of horns or hoofs, teeth or bones, mane or tail, as talisman-trophies—primarily pledges of fealty to the favorable potencies, only secondarily symbols of success. The observances illumine the ever-present esoteric object of the chase, which is to gain the favor or overcome the power of the beast-god [776] represented by the animal hunted; in general, this is sought to be effected through mimetic movements, or symbolic objects, associated with that animal-kind, and the retained charm-trophy is valued as a symbol of the placation or outwitting of a particular deity. Similarly, the Seri warrior strives for the supposed deific symbols of the 727 enemy—the scalp or headdress or arrow of the alien tribesman, the fire-breathing and echo-waking (as well as death-dealing) wand of the Caucasian; and the Papago arrows, Yaqui scalps, and white man's firearms are sought avidly, treasured as fetishes, and often carried conspicuously as badges of borrowed prowess.[2] So the Seri are never 177 without alien insignia in the form of weapons. The day before the 1895 expedition entered their stronghold, a band of warriors and 411 women were frightened from a freshly slaughtered cow by a party of 726 vaqueros so suddenly that their arms were left behind—and these

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[1] It should be noted that the actuality of the poisonous property ascribed to the yerba mala is in some degree questionable; the plant is the only one of southern Papagueria yielding suitable material for arrow-shafts, and it is possible (if not probable) that it was consecrated to this purpose by the aboriginal Opata and protected by tabu in such wise as to become a sacred and fearsome thing. It is accordingly by no means improbable that the reputed poisonous property is but the product of generations of association, and that the plant is really harmless—an inference supported by experiments on the part of the leader of the 1895 expedition, who swallowed the juice of stem and leaves in two or three minute but increasing doses without perceptible effect. On the other hand, it should be observed that the region is one abounding in toxic juices, and that this shrub is so luxuriant and so free from thorny armament and other protective devices of a mechanical sort as to raise the presumption that it must be protected against herbivorous animals, at least, by chemical constituents of some kind (cf. ante, p. 25).

[2] These motives on the part of the Seri were reciprocated by their tribal enemies; a Papago fetich in the form of an Apache arrowpoint, long worn by an aged warrior as a protection from Apache [171] arrows, was among the spoil of the 1894 expedition; and a "poisoned" Seri arrowhead and foreshaft, worn by a superannuated Papago "doctor" as a badge of invulnerability to similar missiles, was cautiously shown to the 1895 expedition, but was held above price by its wearer—and this despite the fact that he had been christianized for decades, and retained no other pagan symbols.

177 included a heavy Springfield "remodeled" rifle, lacking not only ammu-
nition but breechblock and firing pin; while Don Andrés Noriega, of
411 Costa Rica, and L. K. Thompson, of Hermosillo, described a rifle of
726 modern make captured similarly two years before, which was in good working order and charged with a counterfeit cartridge ingeniously fashioned from raw buckskin in imitation of a center-fire brass shell and loaded with a polished stone bullet.[1] The finders opined that the rifles were carried to bluff the enemy, and even that the counterfeit cartridge was designed to do deadly execution; but it would better accord with Seri customs, and with the law of piratical acculturation which they typify,[2] to infer that the weapons were regarded rather as symbols of mystical potencies than as simple scarecrows. Of related import were two or three pseudomachetes made from rust-pitted cask hoops, reported by the majordomo and several vaqueros at Costa Rica; and of still greater significance was a machete picked up in a just-abandoned jacal by Don Ygnacio Lozania—veteran of the Andrade expedition and the Encinas conquest—which was laboriously rasped and scraped out of paloblanco wood, colored in imitation of iron blade and mahogany handle by means of face-paints, and even furnished with "eyes" replacing the handle-rivets, in the form of embedded iron scales. Some of the Seri are familiar with the normal use of firearms, as was demonstrated by the Robinson and other episodes, and many of them modernly make some use of machetes or other knives, as shown by various rudely whittled wooden artifacts; yet the burden of proof indicates that the chief use of the Caucasian's weapons in the heat of actual warfare is shamanistic and symbolic. This interpretation is, in fact, practically established by the experience of the frontier; for the vaqueros and local soldiery have little fear of the ill-understood firearms and clumsily handled machetes occasionally seen in Seri hands, though they dread unspeakably the necromantic arrows and flesh-rending teeth with which the agile foes are credited.

The mystical potency ascribed to Caucasian firearms and cutlery by
174 the zoomimic tribesmen is of interest as a reflection of motives and
324 methods pervading the entire range of their activities; at the same time it suggests the genesis of the aberrant technolithic craft displayed in arrow-chipping. The information obtained from Mashém and his mates concerning chipped arrowpoints implied that the process was hieratic and little understood by the body of the tribe, its place in the tribal knowledge, indeed, being similar to that of the brewing of the arrow "poison", which is the special work of shamans; and this information, comporting as it does with the rarity of the chipped points and

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[439] [1] The imitative skill of the Seri was illustrated at Costa Rica some years ago, when the petty accounts for labor, etc, were kept by means of tokens stamped from sheet brass. While a Seri rancheria was maintained near the rancho, the storekeeper detected a number of counterfeits of his tokens, so well executed as to pass readily over the counter in ordinary exchange—and after extended detective work the counterfeiting was traced to the rancheria.

[2] American Anthropologist, vol. XI, August, 1898, pp. 243-249.

the crudeness of the work, strongly supports the inference that the 174
stone arrow-making of the Seri was originally a fetishistic mimicry of 324
alien devices—a plane, indeed, above which the craft has hardly risen
even in recent decades.

While the Seri are devoid of military tactics in the strict sense of 726
the term, they have certain customs of warfare which seem to be
scrupulously observed. These customs are closely akin to those fol- [224]
lowed in hunting the larger land animals—indeed, the warfare of the
tribe is merely an intensified counterpart of their chase.

The favorite tactical device of the warriors, as indicated by the great majority of their battles, is the ambuscade, laid and sprung either with or without the aid of decoys (usually aged women). Sometimes a considerable body act in concert under a prearranged plan; more commonly a few warriors only are involved at the outset, though these may be joined as the crisis approaches by companions lurking behind rocks and shrubs to be either on hand at the finish or in the way of ready flight, according to the turn of the battle-tide; and it is probable that the greater part of the ambuscades prove stillborn by reason of the oozing courage of leaders and the shirking of their supporters if the prospective victims present a bold front, or if the final omens are otherwise adverse. The ambuscade, with its flying contingent, grades into the device of stalking a stationary or slowly moving enemy, the stealthy approach terminating either in covert attack at close range or in sudden rush by a superior force. The theory, or rather the instinctive plan, of the campaign is to seek advantage in both position and numbers, to keep under cover until the instant of attack, to have sure and ample lines of retreat, and in every way to minimize individual risk.

There is a widespread notion toward the Seri frontier that the savages are given to sorties and surprises by night; but both specific testimony and the records indicate, when carefully analyzed, that this tactical device is much less common in practice than in repute, and is not, indeed, characteristic of the tribe. A few known battles began in attacks by night; but the war parties, like the hunting and fishing parties (save in the semiceremonial pelican pilgrimages), display decided preference for daylight in their forays—indeed, there are various indications that the folk are much more timid and oppressed with superstitious fears by night than by day.

In rare cases small parties of aliens have been half openly surrounded and done to death by considerably larger parties of the savage folk; but this method, too, is incongruous with the fixed habits of the tribe and with the deep-planted instinct of avoiding personal exposure.

A considerable number of the long list of homicides charged against 186
the Seri, and marking the beginning of many of their battles, were
individual rather than collective, the consummation of inimical impulse 648
sometimes treacherously concealed for favorable opportunity, as in the

186 648 pitiful case of Fray Crisóstomo Gil, and othertimes rising explosively beyond the feeble control of the untrained mind; for the impulse of enmity toward aliens is an ever-present possession—or obsession—of the tribe, and a reflection of that race-sense which is their most distinctive attribute.

Of open warfare and face-to-face fighting there is hardly a germ among
726 the Seri. When themselves ambushed or surrounded, some of their stouter warriors have in a few instances faced the foe for a few minutes at a time, as is shown by the annals of Cerro Prieto; yet this accidental attitude but betokens the play of chance rather than the plan of choice. Concordantly, the folk avoid the method of warfare (so common among other Amerind tribes as to be properly considered characteristic) involving open duel between chiefs and other warriors; they seem to be devoid of that sense of fairness in fighting which finds expression in the duel; and despite the individual advantages growing out of gigantic stature, immense strength, and superior swiftness, they habitually seek to combine in numbers against panicked or baffled enemies, just as their hunters throw themselves mercilessly on surrounded quarry. Of open boldness or confident prowess no trace appears; and the body of facts seems to justify the prevailing Sonoran opinion that the warfare of the Seri is treacherous and cowardly in design, craven and cruel in execution.

Once begun, the conduct of the fray by the Seri fighters is fairly uniform; the warriors either discharge clouds of arrows from their coigns of vantage, or rush to brain their victims with stones, or to break their necks and limbs and crush in their chests, as in the slaughtering of quarry; and according to the tale of the occasional survivors—Señor Pasqual Encinas and his son Manuel, Don Ygnacio
[115] Lozania, Don Andrés Noriega, Don Jesus Omada of Bacuachito, and Don Ramon Noriega of Pozo Noriega, are among the survivors and informants; also the sturdy Papago fighters, Mariano, Anton, Miguel, and Anton Castillo (whose sister died of dread while he was on the 1895 expedition)—the rushing warriors are transfigured with frenzy; their eyes blaze purple and green, their teeth glisten through snarling lips, their hair half rises in bristling mane, while their huge chests swell and their lithe limbs quiver in a fury sudden and blind and overpowering as that of springing puma or charging peccary. Of the successful assaults the ghastly end is rarely recorded, though whispered large in the lore of Sonora; in the unsuccessful assaults recounted by survivors the blood-frenzy burned but briefly and died swiftly as the disappointed warriors skulked silently behind rocks and shrubs, or fled across the sands with inconceivable fleetness. These details of battle precisely parallel the details of butchery of beastly quarry, as recounted by local observers and corroborated by Mashém's recitals.

So far as can be ascertained the parallelism between frenzied battling
266 727 and furious butchery in the chase affords the chief basis for the firm

Sonoran belief that the similarity extends one step farther, and that 266
the human victims are rent and consumed, like the beasts. There is a 727
lamentable lack of data concerning the alleged anthropophagy of the Seri; on the one hand there is the deep-seated local opinion, generally growing stronger as the tribal territory is approached, and agreeing so well with the hunting customs, the thaumaturgic arrow-poisoning, the zoomimic handicraft, and zootheistic faith, and especially with the pervading fetish-piracy of the folk, that its validity would seem inherently probable; on the other hand, there is not only a dearth of specific positive testimony, but haciendero Encinas (best informed among Caucasians concerning Seri customs) and several of his yeomen reject the prevailing belief, while Mashém consistently repudiated the custom, both in general and in particular, and in ceremonial as well as in economic aspects, whenever and in whatever way the subject was approached during his intercourse with the 1894 expedition. On the whole, the much-mooted question of Seri cannibalism must be left open pending further inquiry, with some preponderance of evidence against the existence of the custom.

The war-frenzy of the Seri fighters is significant in its parallelism 000
with the blood-craze of the chase, and even more so in its analogy with the warpath customs and ceremonies of most Amerind tribes and many other primitive peoples. In typical tribes the warpath custom is a most distinctive one, standing for an abnormal state of mind and an unaccustomed habit of body, perhaps to the extent of an extreme exaltation or obsession akin to intoxication, in which the ordinary ideas of justice and humanity are inhibited; among most tribes the condition is sought voluntarily and deliberately when occasion is thought to demand, and is superinduced by fasts and vigils, exciting songs and ceremonies, and related means; while among certain tribes the aid of symbolic "medicines", which may be actual intoxicants, is invoked. Thus the savage on the warpath is a different being from the same man in times of peace; viewed from his own standpoint, he is possessed of an alien and violent demon, usually that of a fantastic and furious beast-god whose rage he must symbolize and enact; viewed from the standpoint of higher culture, he is a raving and ruthless maniac whose craze is none the less complete by reason of its voluntary origin. The warpath frenzy is one of the fundamental, even if little understood, facts of primitive life, and the character of the savage tribe can not properly be weighed without appreciation of it. Now, the Seri blood- 171
craze seems measurably distinct in two ways: in the first place, it 726
expresses a more profound and bitter enmity toward aliens than is
found among most savage tribes—i. e., it is instinctive and persistent [186]
in exceptional degree; in the second place, it is more spontaneous and explosive in its culmination when conditions favor than among tribesmen who induce the condition by elaborate preparation—i. e., it is dependent on the swift-changing hazard of warfare in exceptional

measure; so that the Seri frenzy is at once more instinctive and more
171 fortuitous, or in general terms more inchoate, than the corresponding
726 condition among most of their contemporaries. Accordingly the war customs, like several other features of the tribe, seem to afford a connecting link between the habits normal to carnivorous beasts and the well-organized war customs of somewhat higher culture-grades; and thus they contribute toward outlining the course of human development through some of its darker stages.

712 Conformably with their poverty in offensive devices, the Seri are exceedingly poor in devices for defense. It is an impressive fact that a restricted motherland which has been successfully protected against invasion for nearly four centuries of history should be destitute of earthworks, fortifications, barricades, palisades, or other protective structures; yet no such structures exist on any of the natural lines of approach, and none are known anywhere in Seriland save in a single spot—Tinaja Trinchera—where there are a few walls of loose-laid stone, so unlike anything else in Seriland and so like the structures characteristic of Papagueria as to strongly indicate (if not to demonstrate) invasion and temporary occupancy by aliens. The jacales are not fortified in the slightest degree, unless the turtle-shells with which they are sometimes shingled be regarded as armor; even the most ancient rancherias are absolutely devoid of contravallations of earth, stone, or other material; and both the structures themselves and the expressions of the folk concerning them indicate that the jacales are not regarded as fortresses or places of refuge against enemies, but only as comfortable lodges for use in times of peace. Nor are walls like those of the borderland Tinaja Trinchera known in the interior of the tribal territory—e. g., the similarly conditioned Tinaja Anita, which differs only in the greater abundance and permanence of the water-supply, is entirely devoid of artificial structures, not even a pebble or bowlder being artificially placed save perchance by the casual trampling of the pathways. As already noted, the Seri seem to be practically devoid of knife-sense; they are still more completely devoid of fort-sense, although (and evidently because) they rely so fully on natural things, including tutelaries and their own fleetness, for safety.

713 Although devoid of even the germ of fortification-sense, so far as can be discovered, the Seri are not without a sort of shield-sense, which is of much significance partly by reason of its inchoate character. The ordinary shield is a pelican pelt, or a robe or kilt comprising several skins; it is employed either for confusing the enemy by swift brandishing, something after the fashion of the capa of the banderillero in the bull ring, or for actual protection of the body against arrows and other missiles or weapons. So far as known it is not backed or otherwise strengthened, the user relying solely on the stout integument and
[825] thick feathers—or rather on the mystical properties imputed to the
pelt as the mystery-tinged investiture of their chief creative tutelary.

On the coast bucklers are improvised from turtle-shells, though, according 713 to Mashém (confirmed by direct observation), these are not carried inland for the purpose; but the protective function imputed to the [825] turtle was well represented in the rancheria at Costa Rica by several fetishes made from phalanges of turtle-flippers tricked out in rags in imitation of Caucasian dress (somewhat like the mortuary fetishes illustrated in figure 40*a* and *b*). On the whole, the most conspicuous feature of the individual shields or protectors is their emblematic character; they are sortilegic rather than practical, and express imputation of mystical potencies rather than recognition of actual properties; and in this as in other respects they correspond closely with the offensive devices, and aid in defining the ideas and motives of the primitive warriors.

The actually effective protection of the Seri in warfare is their fleetness, 726 coupled with their habitual and constitutional timidity, i. e., their [186] wildness—for they are verily, as their Mexican neighbors say, "gente muy bronco". Moreover, they are adepts in concealing their persons and their movements behind shrubbery and rocks, and in finding cover on the barest plains; and suggestions are not wanting that the protecting [778] shrub-clumps and rocks of their wonted ranges are credited with occult powers and elevated to the lower places of their zoic pantheon, after the customary way of that overpowering zootheism, or animism, which the Seri so well exemplify in many of their habits.

Summarily, the warfare of the Seri complements the pacific industries of the tribe in every essential respect. It is notable for improvidence; i. e., for reliance on chance; the dearth of devices for offense and defense parallels the poverty in industrial artifacts; and the disregard of fortifications is of a kind with the squandering of present food supplies and the utter neglect of provision for the future. A striking correspondence between workfare and warfare is found in the fierce blood-lust displayed alike in chase and battle, a feature manifestly borrowed from beasts and intensified by besetting beast-faith; and more striking still is the correspondence in motive, as revealed by the overlapping functions of the protective kilt, by the borrowing of animal symbols alike in peace and war, and by the imitation of animal movements on the warpath as in the chase.

In the last synthesis the warfare of the Seri may be considered as characterized by two attributes: (1) The motives, so far as developed, are zoomimic in even greater degree than the prevailing motives of the pacific industries; and (2) the methods are shaped largely by mechanical chance, like those normal to protolithic industry.

Nascent Industrial Development

Industries form the chief bond between man and his environment. 000 The esthetic activities arise in the individual and extend to his fellows; the institutional activities express the relations among individual men

000 and groups; the linguistic activities serve to extend social relations in space and time, and the sophic activities to integrate and perpetuate all relations; but it is through the industrial activities that human intelligence interacts with physical nature and makes conquest of the material world. Accordingly, industries act as a steady and never-ceasing stimulus to intelligence; accordingly, too, the industrial activities afford the simplest and surest measure of intellectual advancement.

Under this view of the place of industrial activities in human phylogeny, certain phases of Seri technology acquire importance and especial significance.

105 177 1. One of the most conspicuous features of Seri craft is its local character. The foodstuffs, the materials for appareling and habitations, and the substances utilized in the several lines of simple handicraft are essentially local; moreover, the characteristic methods and devices evidently reflect local environmental conditions. There are, indeed, a few phenomena suggesting, and a still less number demonstrating, extraneous origin; the balsa and the kilt are sufficiently similar to devices of other districts to suggest, though not to prove, genetic identity (indeed, the sum of indications of local origin is much weightier than the several suggestions of extraneous derivation); the iron harpoon-points and arrow-tips are mainly of local flotsam, and are essentially provincial in modes of employment; the chipped stone arrow-tips, though local in material, are foreign in motive; but on summarizing the industrial phenomena, it would appear that by far the greater share are essentially local, while the few of exceptional (and extraneous) character can be pretty definitely traced to importation through the social interactions of recent centuries.

105 182 13 2. An equally conspicuous feature of the industrial craft of the Seri is the dominance of chance in both processes and devices. The traditional "fisherman's luck" is made exceptionally uncertain by the sudden gales and shifting currents of Seriland shores, while the absolute necessaries of life on land are still more capricious than those alongshore; this uncertainty of resources has profoundly affected the somatic features of the tribesman, as indicated elsewhere (ante, p. 159); and that the mental attributes of the folk are even more profoundly affected is attested by the rôle played by chance in the selection and shapement of the prevailing tools of stone and shell. The large rôle of chance in Seri life is also revealed, though less directly, in the overweening mysticism of zootheistic faith, with its material reflection in zoomimic craft. [771]

3. When the local and fortuitous features of the Seri industries are juxtaposed they are found to express a notably inchoate or primitive stage of industrial development. In both the local and the fortuitous or accidental aspects, the activities are so closely adjusted to the immediate environment as to approach the instinctive agencies and movements of bestial life, and correspondingly to diverge from the composite

and cosmopolite characters of higher humanity; the dearth of extrane- 105
ous devices denotes absence or intolerance of that accultural inter- 13
change accompanying and marking the progress of peoples; and the 182
dearth of inventions denotes feebleness of creative faculty and absence
of that self-confidence which accompanies and measures progress in [177]
nature-conquest.

4. When the local and fortuitous features of the Seri craft are viewed
in their serial or sequential relations, they are found to reflect and 105
attest autochthonal development. Excepting the few accultural pro- 177
cesses and devices whose acquisition may confidently be traced to certain social interactions of the historic period, the Seri technic is too closely tied to local environment to warrant any supposition of importation from other districts. The question of the birthplace of the people may be left open in this case as in every other; but the birthplace of practically all those activities and activital products which define the folk as human was manifestly Seriland itself—so that the tribe, considered as a human folk rather than as a zoic variety, must be classed as autochthonous.

Summarily, then, the Seri industries are significant as (1) local, (2) 105
fortuitous, (3) primitive, and (4) autochthonous; and these features combine to illumine a noteworthy stage in primitive thought.

5. On juxtaposing these significant features of Seri technic, they are
found to reflect the tribal mind with noteworthy fidelity, and hence to 13
indicate the sources of Seri mentations, and of the local culture in 181
which these mentations are integrated. The local foodstuffs—espe- 182
cially that vital standard of values in arid regions, water—are periodic sources of the strongest aspirations and inspirations of industrial life, and the methods and devices for food-getting are but the legitimate offspring of the inevitable relation between effort and environment; the conspicuous rôle of chance is but the composite of the hard and capricious environment on the one hand, and of the lowly thought reflecting that environment on the other hand; the zoic faith into which the magma of recurrent chance has semicrystallized finds carnate symbols either in local beasts or in fantastic monsters suggested by those beasts; even the mating instinct, second only to thirst among the impelling action-factors of the folk, is so profoundly and bitterly provincial as to exclude foreign ideals to a degree unparalleled among known peoples. The industrial materials are local—but not more local than the thoughts in which they are reflected; the technical methods are unmistakably the offspring of the environment—but they are equally the offspring of minds reflecting that environment and no other; the few and simple devices stand for integrations of experiences, instinctive rather than ratiocinative, the germ of invention rather than even its opening bud—but the experiences bear the marks of that environment and no other. Accordingly, the mental side of Seri industry, and, indeed, of all Seri life, appears to be the counterpart of the physical side.

181
153
side. The Seri mind is (1) local, (2) chance-dominated, (3) exceeding lowly, and especially (4) autochthonal in its content and workings.

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There is an aspect of the inference as to the local and autochthonal character of the Seri mind which is of wide-reaching application. As indicated by many tribes, though most clearly by the Seri, there is a definite relation between the somatic characteristics of primitive folk and their environment; the indications are that the relation is inversely proportionate to development, the lowliest tribes reflecting environment most closely, and the higher peoples responding less delicately to the environmental pressure in the ratio of their increased power of nature-conquest; and the relation is essentially phylogenetic, in that it sums and integrates the innumerable interactions between organic kind and environment during generations or ages. It is to be realized that the relation is not simple and direct or physiologic merely (e. g., like that between climate and the pelage of an animal), but that it is linked through the human activities; for, as is conspicuously the case in Seriland, the environment prompts exercises of particular kinds, and it is these exercises that shape the somatic features, such as strength of lung, length of limb, and the soundness of constitution displayed in physical endurance; yet the relation is none the less real, in that it operates through the activities rather than directly. The relation may be characterized with respect to mechanism as bodily responsion, or with respect to capacity as *responsivity of body*. Now, as is well illustrated by the provincial ideation of the Seri, the relation between environment and physique is accompanied by a corresponding relation between environment and thought. This relation, too, varies inversely with development, the connection being closest among the most primitive tribes, and growing less and less close with maturing mentality and proportionately increasing power of nature-contest; and the relation is still less direct (or physiologic merely) than that between the human body and its environment, in that not only the bodily activities but the instinctive and nascently ratiocinative processes are interposed. This relation between mind and environment may be characterized as mental responsion in its mechanical aspect, or as *responsivity of mind* when regarded as a psychic property.[1] Accordingly, the relation between the tribal mind and its environment, as illumined by the peculiarly delicate interactions observed among the Seri, seem to indicate the genesis and earlier developmental stages of mentality in its multifarious aspects.

The specially significant feature of the relation between environment on the one hand and body + mind on the other is its diminishing value with general intellectual advancement. Viewed serially, the relation may be considered to begin in the animal realm with organisms 000 adapted to environment through physiologic processes, and to end in that realm of enlightened humanity in which mind molds environment through complete nature-conquest. In the serial scale so defined the various primitive tribes and more advanced peoples may be arranged in the order of mental power or culture-status; when the same arrangement will express in inverse order the relative closeness with which the several tribal minds reflect their environments. It follows that the 182 lowly minds and craft of the Seri reflect their distinctive environment with exceeding, perhaps unparalleled, closeness, because of their very lowliness; it follows, too, that any other equally lowly folk imported into the region and perfectly wonted to it by generations of experience would equally reflect the physical features of the region in their craft and in their thinking; it follows, also, that if the Seri were transported into any other district of equally distinctive physical features, they would gradually adapt themselves to the new environment—though with some added intelligence, and hence with diminished closeness, as is the way of demotic development—in such manner that their craft and thinking would reflect its features. In a more general way it follows that those similarities in culture, or activital coincidences, which have impressed the ethnologic students of the world (notably Powell and Brinton), are normal and inevitable in primitive culture and of diminishing prominence with cultural advancement.

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[1] The responsivity of mind has been defined elsewhere as the basis of knowledge, and as one of five fundamental principles of science (The Cardinal Principles of Science, Proceedings of the Washington Academy of Sciences, vol. ii, 1900, pp. 1-12).

SOCIAL ORGANIZATION

Among the Seri, as among many other aboriginal tribes, the social 829 relations are largely esoteric; moreover, in this, as in other savage groups, the social laws are not codified, nor even definitely formulated, but exist mainly as mere habits of action arising in instinct and sanctioned by usage; so that the tribesmen could not define the law even if they would. Accordingly the Seri socialry[1] is to be ascertained only by patient observation of conduct under varying circumstances. [123] Unfortunately, the opportunities for such observation have been too meager to warrant extended description, or anything more, indeed, than brief notice of salient points.

CLANS AND TOTEMS

The most noticeable social fact revealed about the Seri rancherias is 562 the prominence of the females, especially the elderwomen, in the management 592 of everyday affairs. The matrons erect the jacales without help from men or boys; they carry the meager belongings of the family [462] and dispose them about the habitation in conformity with general custom and immediate convenience; and after the household is prepared, the men approach and range themselves about, apparently in a definite

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[1] A convenient term proposed by Patten.

562 592 order, the matron's eldest brother coming first, the younger brothers next, and finally the husband, who squats in, or outside of, the open end of the bower. According to Mashém's iterated explanations, which were corroborated by several elderwomen (notably the clanmother [423] known to the Mexicans as Juana Maria) and verified by observation of the family movements, the house and its contents belong exclusively to the matron, though her brothers are entitled to places within it whenever they wish; while the husband has neither title nor fixed place, "because he belongs to another house"—though, as a matter of fact, he is frequently at or in the hut of his spouse, where he normally occupies the outermost place in the group and acts as a sort of outer guard or sentinel. Conformably to their proprietary position, the matrons have chief, if not sole, voice in extending and removing the rancheria; and such questions as that of the placement of a new jacal are discussed animatedly among them and finally decided by the dictum of the eldest in the group. The importance of the function thus exercised by the women has long been noted at Costa Rica and other points on the Seri frontier, for the rancherias are located and the initial jacal erected commonly by a solitary matron, sometimes by two or three aged dames; around this nucleus other matrons and their children gather in the course of a day or two; while it is usually three or four days, and sometimes a week, before the brothers and husbands skulk singly or in small bands into the new rancheria.

Quite similar is the regimentation of the family groups as indicated by the correlative privileges and duties as to placement, as well as the reciprocal rights of command and the requirements of obedience. Ordinarily (especially when the men are not about) the elderwoman of the jacal exercises unlimited privileges as to placement of both persons and property, locating the olla, the bedding, the fire (if any), and other possessions at will, and assigning positions to the members of her family, the nubile girls receiving especial attention; she is also the arbiter of disputes, the distributor of food, etc; but in case of tumult, especially when children from other jacales are present, she may invoke the author- [614] ity of the clanmother, whose powers in the rancheria are analogous to those of the younger matrons in their own jacales. Even when the men are present they take little part in the regulation of personal conduct, but tacitly accept the decision of matron or clanmother; yet in emergencies any of the women are ready to appeal for aid in the execution of their will to a brother (preferably the elder brother) of the family, or, if need be great, to the brothers of the clanmother. So far as was observed, and so far as could be ascertained through informants, these appeals are always for executive and never for legislative or judicative cooperation; but various general facts indicate that in times of stress—in the heat of the chase, in the warpath-craze, etc—the men bestir themselves into the initiative, while the women drop into an 562 inferior legislative place. As an illustration of the ordination in some-

As an illustration of the ordination in some- 129
what unusual circumstances, it may be noted that when the "Seri 562
belle" (Candelaria) refused to pose for a photograph she was supported 626
by the clanmother (Juana Maria) until the latter was placated by presents;
and that when the belle refused to obey the mother's command—
to the vociferous scandal of the entire group—Juana Maria appealed
to Señor Encinas, as the conqueror of the tribe and hence as the virtual
head of both rancho and rancheria. And when a younger Seri maiden
(plate XXV) similarly refused to pose, and in like manner disobeyed her
mother (again to the general disgust), the latter appealed to Mashém;
when he, after first exacting additional presents for both girl and
mother and a double amount for himself, put hands on the recalcitrant
demoiselle and forced her into the pose required, despite the shrinking
and tremulous terror perceptible even in the picture.

Commonly the regimentation of family, clan, and larger group appears 592
to be indicated approximately by the placement assumed spontaneously in the idle lounging of peace and plenty. A typical placement of a small group is illustrated in plate XIV. Here the family are assembled outside the jacal, but in the relative positions which would be assumed within. The matron (a Red Pelican woman) squats in easy reach of her few and squalid possessions; on her left, i. e., in the group-background and place of honor, sits the elderwoman of the rancheria (a Turtle); then comes the daughter of the family, followed by two girl-child guests of the group, the three occupying positions pertaining to chiefs or elder brothers or, in their absence, to daughters; opposite the matron sits a younger brother,[1] whose wife is a Turtle woman (daughter of the dame in the place of honor) and matron of another jacal. A few feet behind this brother (just outside the limits of the photograph reproduced, though shown on the duplicate negative) squats the husband, with his side to the group and face toward the direction of natural approach; while the place belonging to the sons of the family on the matron's right is temporarily occupied by a White Pelican girl, together with a dog, notable in the local pack for largely imported blood and correspondingly docile disposition. The place for the babe, were there one in the family, would be on the heap of odds and ends behind
the matron. As in this group so in most others, the place of the sons [858]
is vacant; for the boys are at once the most restless and the most law- [882]
less members of the tribe—indeed, the striplings seem often to ignore
the maternal injunctions and even to evade the rarely uttered avuncular orders, so that their movements are practically free, except in so far as they are themselves regimented or graded by strength and fleetness and success in hunting.

The raison d'être of the proprietorship and regimentation reflected in 302
the everyday customs is satisfactorily indicated by that totemic feature 614
of the social organization revealed in the face-painting described in

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[1] This man was one of those involved in the Robinson butchery on Tiburon island a few months before the picture was taken; and he was one of those executed or transported for the affair during the interval between the 1894 and 1895 expeditions.

614 earlier paragraphs (pp. 164–169); these symbols evidently represent an
[302] exclusively maternal organization into clans consecrated to zoic tutelaries. The tutelaries, or totems, together with the clan names and all
personal designations connected with the totems, are highly esoteric,
and were not ascertained save in the few cases mentioned above.[1]

It should be observed that the identification of kindred by the alien
593 observer is difficult and somewhat uncertain, since the relationships
recognized in Seri socialry are not equivalent to those customary among
Caucasians. It was found especially difficult to identify the husband
[582] of the jacal, partly because he is commonly incongruously younger (and
hence relatively smaller) than the mistress, and partly because of the
undignified position of outer guard into which he is forced by the tribal
etiquette. Moreover, his connection with the house is veiled by the
absence of authority over both children and domestic affairs, though
he exercises such authority freely (within the customary limits) in the
[842] jacales of his female relatives. There is, indeed, some question as to
the clear recognition of paternity; certainly the females have no term
601 for "my father", i. e., the term is the same as that for "my mother",
em, though the males distinguish the maternal ancestor by a suffixed
syllable (*e*="my father"; *e-ta* or *i'-tah*="my mother"), which seems
to be a magnificative or an intensificative element. It is noteworthy
that the kinship terminology is strikingly meager; also that while the
records suggest various significant points, the material is hardly rich
enough to warrant complete synthesis of the consanguineal system.

While the burden of the more permanent property pertains to the
421 women, there is a decided differentiation of labor with a concomitant
vesting of certain property in the warriors—the distinctively masculine
chattels comprising arrows, quivers, bows, turtle-harpoons, etc. There
are indications that the balsas, too, are regarded as masculine property. The impermanent possessions—water, food, etc—seem to be the
common property of men, women, and children, except in so far as the
[264] right is regulated by regimentation; for the privileges of eating and
drinking are enjoyed in the order of seniority. In the reckoning of
554 seniority, the chief (who is comonly such in virtue of his position as
nominal elder brother of a prolific dame) ranks first, and is followed by
602 other warriors in an order affected in an undetermined way by conjugal relations as well as by their prowess or sagacity (the equivalents
of age in primitive philosophy) down to an undetermined point—
apparently fixed by puberty; then comes the clanmother, followed by
her daughters in the order of nominal age, which is affected by the
status of spouses and the number of living offspring; finally come
the children, practically in the order of their strength (which also
is deemed an equivalent of age), though the girls—especially those

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[121] [1] The chief object of the 1896 expedition was to pursue the inquiries concerning social organization, totems, etc; but, as mentioned elsewhere, this object was defeated by the troublous history of the tribe during the earlier part of 1896, and the consequent revival and intensification of their animosity toward aliens.

approaching nubility—receive some advantage through the con- 554
nivance of the matrons. To a considerable extent in the matter 602
of sustentation, and to a dominant degree in the matter of appar-
eling, the distribution of values is affected by a highly signifi- 554
cant (though by no means peculiar) humanitarian notion of inher- 577
ent individual rights—i. e., every member of the family or clan is
entitled to necessary food and raiment, and it is the duty of
every other person to see that the need is supplied. The stress of
this duty is graded partly by proximity (so that, other things equal, it
begins with the nearest person), but chiefly by standing and responsi-
bility in the group (which again are reckoned as equivalents of age),
whereby it becomes the business of the first at the feast to see that
enough is left to supply all below him; and this duty passes down the
line in such wise as to protect the interests of the helpless infant, and
even of the tribal good-for-naught or hanger-on, who may gather crumbs
and lick bones within limits fixed by the tribal consensus. Beyond these 626
limits lies outlawry; and this status arises and passes into the tribal
recognition in various ways: Kolusio was outlawed for consociating
with aliens, and Mashem narrowly missed the same fate at several stages
of his career; the would-be grooms who fail in their moral tests are
ostracized and at least semioutlawed, and range about like rogue ele-
phants, approved targets for any arrow, until they perish through the
multiplied risks of solitude, or until some brilliant opportunity for display
of prowess or generosity brings reinstatement; deformed offspring are
classed as outside the human pale, even when the deformity is defined [732]
rather by occult associations than by physical features; abnormal and
persistent indolence, too serious for scorn and ostracism to cure, may
also outpass the tribal toleration; and, as indicated by Mashem's guarded
expressions and slight additional data, disease, mental aberration, and
decrepitude are allied with indolence and deemed sufficient reason for
excluding the persistently helpless from the tribal solidarity, and hence
from recognized humanity—and the fate of the outlaw, even if nothing
more severe than abandonment in the desert, is usually sure and swift.
The entire customs of outlawry among the Seri are singularly like those
of gregarious animals, including especially kine and swine in domesti-
cation. Now, studied equity in the distribution of necessaries might 185
seem to be allied to thrift; but it is noteworthy that this is not so among
the Seri, who take thought for one another but not for the morrow,
who seem to have no conception of storage (save an incipient one in
connection with water and the repulsive notion underlying the "second
harvest"), and who habitually gorge everything in sight until their
stomachs and gullets are packed—and then waste the fragments.

The division of labor which affects proprietary interests is undoubt- 462
edly affected in turn by the militant habit of the tribe and by the fre-
quent decimation of the warriors. In general, the adult males limit their
work to fighting and fishing, with occasional excursions into the hunt-

ing field; though by far the greater part of their time is spent in listless
462 lounging or heedless slumber under the incidental guard of roaming
youths and toiling women. The matrons are the real workers in the
tribal hive; they are normally alert and active, passing from one simple task to another, gathering flotsam food along the beach or preparing edibles in the shadow of the jacal, with an eye ever on material possessions and children; they frequently join in hunting excursions of considerable extent; they are the chief manufacturers of apparel, utensils, and tools; and the scions of Castilian caballeros are not infrequently staggered at the sight of half a dozen Seri women "milling" a band of horses, and at intervals leaping on one to kill it with their
hands. The masculine drones are the more petted and courted by rea-
[162] son of their fewness, for during a century or two, at least, the women
[562] have far outnumbered their consorts—a disproportion doubtless tending
in some respects toward the disintegration of the clan system and, reciprocally, toward the firmer union of the tribe.

One of the most noteworthy extensions of feminine functions among
[756] the Seri is toward shamanism. So far as could be ascertained from
Mashém and the associated matrons at Costa Rica, it is such beldams as Juana Maria who concoct the arrow "poison", compound both necromantic medicines and curative simples, cast spells on men and things, and even fabricate the stone arrowpoints and counterfeit cartridges; though unhappily the data are neither so full nor so decisive as desirable.[1]

Conformably with their prominence in proprietary affairs, the Seri
562 matrons seem to exercise formal legislative and judicative functions; for
623 not only do they hold their own councils for the arrangement of the
domestic business of the rancherias, but they also participate prominently in the tribal councils (as explained by Mashém), and play important rôles in carrying out the decisions of such councils—as when they cooperate with war parties as decoys, or journey across their bounding desert to spy out the land of the enemy.

On the whole, it would appear that the clan organization of the Seri
614 conforms closely with that characteristic of savagery elsewhere, especially among the American aborigines. The social unit is the maternal clan, organized in theory and faith in homage of a beast-god, though defined practically by the ocular consanguinity of birth from a common line of mothers; yet the several units are pretty definitely welded into
[619] a tribal aggregate by common feelings, identical interests, and conjugal
ties. The most distinctive features brought out by the incomplete
562 investigation are the somewhat exceptional manifestation of property-
right in the females, the singularly strong sense of maternal relation, and the apparent prominence of females in shamanistic practices as well as in the tribal councils.

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[1] The agency of the women in applying the arrow "poison" was noted by Hardy; cf. p. 238.

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CHIEFSHIP

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The unformulated tribal laws of the Seri are intimately connected with leadership, which is, in turn, largely a reflection of personal characteristics; so that the tribal organization is about as variable as that of the practically autonomous herds of cattle ranging the Sonoran plains adjacent to Seriland. Indeed, just as the stock-clans enjoy a precedence on pasturage and at waterholes, determined by the valor and strength of the bulls by which they are led, so the Seri clans appear to be graded by the prowess of their masculine leaders, combined with the sortilegic success of the leaders' consorts; while, just as the leadership of the cattle shifts from band to band as the years go by, according to the fairly equal hazard of natural selection, so the clan dynasties of the human group rise, flourish, and decline in an endless succession shaped by the chances of birth and survival under a capricious environment, by the fate of battles internecine and external, and by various other factors. The instability of the Seri organization is demonstrated by the tribal changes recorded in history, as well as by the vicissitudes within the memory of Señor Encinas and others. At the beginning of the records the Upanguayma were already exiled from Seriland proper [175] and apparently suffering from raids of their collinguals; within a century the Guayma, also, were expatriated and nearly annihilated; then, in the early part of the present century, the Tepoka were extruded and (after a series of wars in active progress in Hardy's time) forced far up the coast to one of the poorest habitats ever occupied by any folk. So, too, throughout the Encinas régime the internal dissensions continued whenever the clans were not combined against aliens; and the veteran pioneer has seen much intratribal strife, attended by the rise and passing of many chiefs, both acknowledged and pretended, and often exercising chiefly prerogatives two or three at a time. This instability grows largely out of the fact that the essential unit is the clan, and that the tribe is nothing more than a lax aggregation; and it is measurably explained by the crude customs accompanying the choice of leaders.

562 614

As already noted, the clan organization is maternal, and the clan-mother is the central figure of the group; but the executive power resides in her brothers in the order of seniority—i. e., while the personal arrangement of the group is maternal, the appellate administration is fraternal. So far as could be ascertained, the form of government is clearly discriminable from that commonly styled avuncular; for, in the first place, the minor administration accompanying the control of property invests the elderwomen with exceptional legislative and judicative powers, while, in the second place, there are no old men (by reason of [888] the militant habit), so that the reverence for age so assiduously cultivated in primitive life extends to matrons much more than to men.

614 Classed with respect to major administration, therefore, the clan may
be regarded as an informal *adelphiarchy* (ἀδελφός and ἄρχος) or *adelphocracy*
(ἀδελφός and κρατός). It has none of the elements of the
patriarchy, since male lineage is not recognized, and can not be classed
as a matriarchy, since the clanmother is admistratively subordinate to
her brothers; while the avuncular functions are apparently inchoate
and indirect, i. e., exercised only through or in conjunction with the clanmother.
In short, the clan is ordinated or regimented in ostensible
accordance with physical power, though the real faculty is confused
(after the fashion of primitive thinking generally) with mystical faculties,
imputed largely on magical grounds but partly on grounds of agereverence,
etc. Now, when two or more clans combine, the basis on
578 which the common chiefship is determined is similar to that determining
614 the clan leadership; at the outset three factors enter, viz, (1) the
643 seniority of the clans in the accepted tribal mythology (2) the prowess
of the respective clan leaders (always weighed in conjunction with the
[756] shamanistic potency of their consorts), and (3) the numerical strength
of the respective clans; but practically, so far as can be judged from
all available information, the choice really reflects physical force, since
in case of doubt the strongest and bravest man becomes the oldest by
virtue of his strength and bravery, while the strongest clan finds fair
ground for claiming seniority in the very fact of its strength. Naturally
disputes arise in the adjustment of the several relations; and in
the actual analysis in council, the dispute is commonly reduced to a
contest between gods and men, i. e., between the claims for mystical
and magical potencies on the one hand and the claims of brawn and
bone on the other hand, so that strength wins, unless omens or prodigies
turn the scale—which happens often enough to keep the subjective
and the objective elements in fairly equal balance. Sometimes
the contests are quickly settled; again they last for months, during
which the tribe struggles under its weight of Cerberus heads; and
repeatedly the disputes have ended in the annihilation of clans, or
even in the tribal fissions attested by the recorded and traditional
history of the Serian family.

The chiefship once determined, the leader bends all energies toward
643 maintaining the position by which he is dignified and his clan exalted.
He recognizes his responsibility for the welfare of the tribe—not only
for success in battle and food-getting, but for stilling storms at sea,
protecting the aguajes from the drought-demons, and securing all other
benefits, both physical and magical; he must be aggressive yet cautious
on the warpath, fleet and enduring in retreat, indomitable in the chase,
bold but not reckless on the balsa, and above all panoplied and favored
by the shadowy potencies of air and earth and waters; he must be the
local and lowly Admirable Crichton, and his never-neglected watchword
must be *noblesse oblige*. His practical devices for maintaining prestige
are many and diverse; it is commonly the chief who carries the sym-

bolic weapon, the counterfeit cartridge, the imitation machete, or other charm against alien power; it is usually he who wears the white man's 643 hat or random garment in lieu of the deer or lion mask of earlier days; and during recent years his most-prized fetish, and one which practically insures the support of his fellows, is a written certificate of his [648] chiefship from Señor Encinas, or, still better, from El Gobernador at Hermosillo. Yet he is a throneless and even homeless potentate, sojourning, like the rest of his fellows, in such jacales as his two or three or four wives may erect, wandering with season and sisterly whim, chased often by rumors of invasion or by fearsome dreams, and restrained by convention even from chiding his own children in his wives' jacales save through the intercession of female relatives.

In 1894 the head chief was reported to be on Tiburon; the putative chief of the rancheria at Costa Rica was the taciturn giant known as El Mudo (plate XIX); while Mashém (or Juan Estorga) was the head of one of the Pelican clans.

ADOPTION

One of the more important factors in demotic development among 594 primitive peoples (probably second only to interclan marriage in extending sympathy and unifying law) is adoption; and special efforts were made to obtain data relating to the subject. Direct inquiries were futile, the responses indicating that the entire subject is foreign [124] to the thought of the tribe; but three sporadic and measurably incongruous examples of quasi adoption are worthy of record.

The most specific case is that of Lieutenant Hardy, who visited Isla 597 Tiburon in 1826, and was fortunate in gaining the confidence of the tribe through successful medical treatment of the wife of the chief. On 649 his second landing he was greeted with many expressions of gratitude, which were especially exuberant on the part of the daughter of the family (always a personage in Seri custom), who insisted on painting his face. He specifies:

> Not wishing to deny her the indulgence of this innocent frolic, I quietly suffered her to proceed. She mixed up part of a cake of blue color, which resembles ultramarine (and of which I have a specimen), in a small shell; in another, a white color, [386] obtained by ground talc, and in a third was mixed a color obtained from the red flint-stone of the class which I before stated was to be found on Seal Island, and resembled cinnabar. With the assistance of a pointed stick the tender artist formed perpendicular narrow stripes down my cheeks and nose, at such distances apart as [302] to admit of an equally narrow white line between them. With equal delicacy and skill the tops and bottoms of the white lines were finished off with a white spot. If the cartilage of my nose at the nostrils had been perforated so as to admit a small, round, white bone, five inches in length, tapering off at both ends and rigged something like a cross-jack yard, I might have been mistaken for a native of the island. As soon as the operation was finished, the whole party set up a roar of merry laughter, and called me "Hermano, Capitan Tiburow," being the very limited extent of their knowledge of Spanish.[1]

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[1] Travels, p. [illegible].

597 While the lieutenant attached no significance to the painting, the
procedure would seem to have been a ceremonial adoption, such as
648 might, for example, be used in connection with a confederate clan.
The description of the painting is sufficiently explicit to identify the
totem with that of the Turtle clan, represented by the clanmother and
the daughter of the clan at Costa Rica in 1894 (plates XVIII and XXIV);
but it is noteworthy that the salutation with which the ceremony terminated, and which may be rendered "Captain-Brother of the Sharks", would seem to identify the totem with the shark rather than the turtle.[1]

The second case of adoption (if so it may be styled) was that of Señor Encinas, after his bloodiest battle, in which nearly all of the Seri warriors were left on the field. In this case there was no ceremony, or at least none remembered by the beneficiary; he was merely informed by a delegation of aged dames that thenceforth he would be regarded as a stronger and more invulnerable chief (shaman) than any member of the tribe, and hence as the tribal leader.

The third instance is still less definite, though it seems to be trust-
173 worthy. There is a widespread tradition throughout Sonora that in
the course of a brush between a band of Papago hunters and a marauding
563 bunch of Seri warriors in the mountains southeast of Cieneguilla
727 twenty-five or thirty years ago, a Papago maiden was captured and
carried off to Tiburon; and that for some years thereafter—i. e., until the Papago had taken ample blood-vengeance—the intertribal animosity was exceptionally bitter. No wholly satisfactory basis for the traditions could be found among the Papago, though some of the silences of the old men were suggestive; nor was the tradition fully credited by Señor Encinas, despite its deep lodgment in the minds of some of his yeomanry. When Mashém was interrogated on different occasions, he merely shook his head in stolid silence; but when the device was adopted of inquiring the number of Papago children brought into the tribe through this woman he responded promptly with a snort of scorn, and followed this with the explanation that she never had children, and could not because she was an alien slave. The explanation was corroborated by clanmother Juana Maria and other matrons, with sundry expressions of contemptuous disapproval of the inquiry and scorn of the very idea that aliens could fructify within the tribe. Later, the ice being broken, Mashém intimated that the woman had recently died of old age and its consequences—doubtless as an outcast. On the whole, the direct testimony would seem to substantiate the tradition, and to supplement it with the short and simple annals of a spouseless and childless life (incredible of other tribes, but consistent

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[124] [1] This identification may possibly be correct; the collocation of the totem with the turtle was
shaped through unwilling and perhaps misleading responses made by Mashém to inquiries in 1894—
[773] these responses denoting a sea monster which in the beginning helped the Ancient of Pelicans to make
the world by pushing from below, and which is now very good food—a description apparently fitting the turtle more closely than the other animal.

with the customs of the Seri), endured for many years and ending at 173 563
last in unpitied death. 727

Collectively the cases seem to define a germ, rather than a mature custom, of adoption. In the first case a benefactor (by means regarded 597
as magical) was formally inducted into the reigning family; in the 563
second case the conquering hero (through what were again regarded as magical means) was less formally recognized and venerated, even worshiped, as an all-powerful shaman; while in the third case a representative of the doughtiest alien tribe was enslaved, probably with motives akin to those expressed in the carrying of chargeless guns, the making of imitation machetes, and other fetishistic devices. Except in the first instance there is no indication of consistent custom; but since the entire history of the tribe clearly contradicts regulated adoption of aliens (and indeed affords no other example), it must be inferred that any such custom is intratribal rather than intertribal.

MARRIAGE

The most striking and significant social facts discovered among the 595
Seri relate to marriage customs.

As noted repeatedly elsewhere, the tribal population is preponderantly feminine, so that polygyny naturally prevails; the number of wives reaches three or possibly four, averaging about two, though the younger warriors commonly have but one, and there are always a number of spouseless (widowed) dames but no single men of marriageable [589]
age. So far as could be ascertained, no special formalities attend the taking of supernumerary wives, who are usually widowed sisters of the first spouse; it seems to be practically a family affair, governed by considerations of convenience rather than established regulations—an [174]
irregularity combining with other facts to suggest that polygyny is incidental, and perhaps of comparatively recent origin.

The primary mating of the Seri is attended by observances so elabo- 581
rate as to show that marriage is one of the profoundest sacraments of the tribe, penetrating the innermost recesses of tribal thought, and interwoven with the essential fibers of tribal existence. Few if any other peoples devote such anxious care to their mating as do the Seri;[1] and among no other known tribe or folk is the moral aspect of conjugal union so rigorously guarded by collective action and individual devotion.

The initial movement toward formal marriage seems to be somewhat 584
indefinite (or perhaps, rather, spontaneous); according to Mashém it may be made either by the prospective groom or else by his father, though not directly by the maiden or her kinswomen. In any event the prerequisites for the union are provisionally determined in the suitor's family; these relate to the suitability of age, the propriety of [582]

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[1] Perhaps the closest parallel in this respect is that found in the elaborate marriage regulations prevailing among the Australian aborigines, as described by Spencer and Gillen, Walter E. Roth, and other modern observers.

584 the clan relation, etc; for no stripling may seriously contemplate matrimony until he has entered manhood (apparently corresponding with
[582] the warrior class), nor can he mate in his own totem, though all other clans of the tribe are apparently open to him; while the maiden must have passed (apparently by a considerable time) her puberty feast. In any event, too, the proposal is formally conveyed by the elderwoman of the suitor's family to the maiden's clanmother, when it is duly pondered, first by this dame and her daughter matrons; and later (if the proposal is entertained) it is deliberated and discussed at length by the matrons of the two clans involved, who commonly hold repeated councils for the purpose. At an undetermined stage and to an undetermined degree the maiden herself is consulted; certainly she holds the power of veto, ostensible if not actual. Pending the deliberations the maiden receives special consideration and enjoys various dignities; if circumstances favor, her kinswomen erect a jacal for her; and even if circumstances are adverse, she is outfitted with a pelican robe of six or eight pelts and other matronly requisites. When all parties concerned are eventually satisfied a probationary marriage is arranged, and the
585 groom leaves his clan and attaches himself to that of the bride. Two essential conditions—one of material character and the other moral—are involved in this probationary union; in the first place, the groom must become the provider for, and the protector of, the entire family of the bride, including the dependent children and such cripples and invalids as may be tolerated by the tribe—i. e., he must display and exercise skill in turtle-fishing, strength in the chase, subtlety in warfare, and all other physical qualities of competent manhood. This relation, with the attendant obligations, holds for a year, i. e., a round of the seasons. During the same period the groom shares the jacal and sleeping robe provided for the prospective matron by her kinswomen, not as privileged spouse, but merely as a protecting companion; and throughout this probationary term he is compelled to maintain continence—i. e., he must display the most indubitable proofs of moral force. During this period the always dignified position occupied by the daughter of the family culminates; she is the observed of all observers, the subject of gossip among matrons and warriors alike, the recipient of frequent tokens from designing sisters with an eye to shares of her spouse's spoils, and the receiver of material supplies measuring the competence of the would-be husband; through his energy she is enabled to dispense largess with lavish hand, and thus to dignify her clan and honor her spouse in the most effective way known to primitive life; and at the same time she enjoys the immeasurable moral stimulus of realizing that she is the arbiter of the fate of a man who becomes warrior or outcast at her bidding, and through him of the future of two clans—i. e., she is raised to a responsibility in both personal and tribal affairs which, albeit temporary, is hardly lower than that of the warrior-chief. In tribal theory the moral test measures

the character of the man; in very fact, it at the same time both measures 585 and makes the character of the woman. Among other privileges bestowed on the bride during the probationary period are those of [835] receiving the most intimate attentions from the clanfellows of the groom; and these are noteworthy as suggestions of a vestigial polyandry or adelphogamy. At the close of the year the probation ends in a feast provided by the probationer, who thereupon enters the bride's jacal as a perpetual guest of unlimited personal privileges (subject to tribal custom); while the bride passes from a half-wanton heyday into the duller routine of matronly existence.

These details were elicited at Costa Rica in 1894 through methodical 124 inquiries made in connection with the linguistic collection. This collection was made with the cooperation of Señor Alvemar-Leon as Spanish-English interpreter, together with Mashém and (commonly) the clanmother known as Juana Maria. Usually quite a group of Seri matrons with two or three warriors were gathered about, and to these Mashém frequently appealed for advice and verification, while they constantly expressed approval or disapproval of questions and replies, as gathered through Mashém's words and mien, in such manner as to afford a fair index of their habitual thought—e. g., when the Seri vernacular for "twins" was obtained and the inquiry was extended (by [845] normal association of ideas) to the term for "triplets", Mashém collapsed into moody silence while the rest of the group decamped incontinently with horror-stricken countenances—thereby suggesting cautious subsequent inquiry, and the discovery that triplets are deemed evil monsters and their production a capital crime. It was in one of the earlier conferences that the first intimations concerning the unusual marital customs were incidentally brought out; the Caucasian interpreter and bystanders were diverted by the naive reference to the moral test, but their expressions were hastily checked lest the native informants might be startled and rendered secretive; then, during two later conferences, when Mashém and several matrons were freely participating in the proceedings, the line of inquiry was so turned as to touch on various aspects of the marriage custom and bring out all essential features; so that much confidence is reposed in the accuracy of the details.[1] The confidence in the verity of the customs was such as not to be 114 impaired seriously by the fact that no records of coincident moral tests were known in the voluminous literature of marriage and its concomitants; 171 nor was it shaken by the still weightier fact that none of the experienced ethnologists to whom inquiries were addressed during ensuing months were acquainted with parallel customs—indeed the only shadow of corroboration thus obtained came in the form of references to the widespread requirement of continence in war and ceremonies,

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[1] It may be observed that Kolusio, when visited in January, 1896, failed to corroborate the descriptions of Mashém and the matrons; but his failure occasioned little surprise for the reason that he has [115] not lived with his tribe since early boyhood, and is equally uninformed (or uncommunicative) concerning the myths, ceremonies, and even the totems of the tribe.

114 171 and to an affectation of self-restraint for a moon on the part of Zuñi grooms noted by Frank Hamilton Cushing. Accordingly the facts were announced in a preliminary paper,[1] and were shown to stand in such relation to the marital customs of other aboriginal tribes as practically to demonstrate their validity, and at the same time to locate the Seri customs on a lower plane of cultural development than any hitherto definitely recognized.

171 Happily, subsequent researches have resulted in the discovery of records corroborative of the primitive customs observed by the Seri, and also of the assignment of serial place to these customs. The most specific record is that of John Giles (or Gyles), who spent his youth as a captive among the northeastern Algonquian Indians (probably the Maliseet or some closely related Abnaki tribe), from August 2, 1689, to June 28, 1698. Referring to the marital customs of the tribe, he observed:

> If parents have a daughter marriageable, they seek a husband for her who is a good hunter. If she has been educated to make *monoodah* (Indian bags), birch dishes, to lace snowshoes, make Indian shoes, string wampum belts, sew birch canoes, and boil the kettle, she is esteemed a lady of fine accomplishments. If the man sought out for her husband have a gun and ammunition, a canoe, a spear, a hatchet, a monoodah, a crooked knife, looking-glass and paint, a pipe, tobacco, and knot-bowl to toss a kind of dice in, he is accounted a gentleman of a plentiful fortune. Whatever the new married man procures the first year belongs to his wife's parents. If the young pair have a child within a year and nine months, they are thought to be very forward and libidinous persons.[2]

This record is of peculiar interest in that it definitely specifies a custom corresponding with the material test of the Seri, and unmistakably implies the existence, at least in vestigial or sentimental form, of a custom corresponding with the moral test of Seriland; and it is particularly noteworthy as coming from a remote tribe occupying a distant part of the continent.

A somewhat less specific corroboration is found in Lawson's account of the Carolina tribes. He observes:

> When any young Indian has a mind for such a girl to his wife, he, or some one for him, goes to the young woman's parents, if living; if not, to her nearest relations, where they make offers of the match betwixt the couple. The relations reply, they will consider of it; which serves for a sufficient answer, till there be a second meeting about the marriage, which is generally brought into debate before all the relations, that are old people, on both sides, and sometimes the king, with all his great men, give their opinions therein. If it be agreed on, and the young woman approve thereof, for these savages never give their children in marriage without their own consent, the man pays so much for his wife; and the handsomer she is the greater price she bears. Now, it often happens that the man has not so much of their money ready as he is to pay for his wife; but if they know him to be a good hunter, and that he can raise the sum agreed for, in some few moons, or any little

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[1] The Beginning of Marriage, American Anthropologist, vol. IX, 1896, pp. 371–383.

[2] Memoirs | of | Odd Adventures, | Strange Deliverances, etc. | in the | Captivity of John Giles, Esq., | Commander of the Garrison on Saint George river, in the | District of Maine. | Written by Himself. | Originally published at Boston, 1736. | Printed for William Dodge. | Cincinnati: | Spiller & Gates, printers, 169 Vine street. | 1869.—P. 45.

> time they agree, she shall go along with him as betrothed, but he is not to have any knowledge of her till the utmost payment is discharged; all which is punctually observed. Thus they lie together under one covering for several months, and the woman remains the same as she was when she first came to him.[1] 171

This record also is peculiarly pertinent, partly in that it practically corroborates the Seri testimony, but chiefly in that it indicates definite transition toward a higher culture-plane in which the primitive material test is at least partially replaced by a commutation in goods or their equivalents.

On reducing the marital customs of the Seri to conventional terms, 582 the more prominent features are found to be (1) strict clan exogamy and (2) absolute tribal endogamy, together with (3) theoretical or constructive monogamy, coupled with (4) vague traces of polyandry, and (5) an apparently superficial polygyny, as well as (6) total absence of purchase or capture of either spouse.

On reviewing the customs in the light of their influence on the 581 everyday life of the tribe, certain features stand out conspicuously: 584 (1) Perhaps the most striking feature is the collective character of the function; for while the movement originates in personal inclination on the part of the suitor and is shaped by personal inclination on the part of the maiden, all manifestations of inclination are open and public (at least to the elders of the two clans involved), while the personal sentiments on both sides are completely subordinated to the public interests of clans and tribe as weighed and decided by the matronly lawgivers and adelphiarchal administratives. Thus neither man nor maid mates for thonself, but both love and move in the tribal interests and along the lines laid down by the tribal leaders. (2) As a corollary or a complement (according to the viewpoint) to the collectivity of the mating, the next most striking feature is the formal or legal aspect of the union; for the entire affair, from inception to consummation, is rigorously regulated by precedents and usages handed down from an immemorial past. Thus the roots of young affection are not destroyed but rather cultivated, though the burgeoning vine and the outreaching tendrils are trained to a social structure shaped in ages gone and kept in the olden form by unbroken tradition. (3) A collateral feature of the customs is the necessary reaction of the requirements on individual character of both groom and bride; for the would-be warrior-spouse is compelled to display high qualities of physical and moral manhood on pain of ostracism and outlawry, so that his passions of ambition and affection are at once stimulated to the highest degree, while the maiden's pride of blood and possession and her sense of regnant responsibility are fostered to the utmost. The brief prelimi- 584 nary courtship and the long probationary mating mark an era of intensi- 585 fication in two lives at their most impressionable stage; and if there be

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[1] The History of Carolina, etc, by John Lawson (1714), reprint of 1860, pp. [illegible]. Attention was called to this passage by Mr James Mooney.

584 aught in the simple yet puissant law of conjugal conation—that law whose motive underlies the world's song and story and all the pulsing 585 progress of mankind as the inspiration of most men's work and most women's hopes—the vital intensity of this era passes down the line of blood-descent to the betterment of later generations. (4) Another collateral feature is the necessary reaction on clan and tribe; for not only [182] does the individual character-making raise the average physique and [146] morale of the group, but the carefully studied restraint of excessive individuality serves to strengthen still further the tribal bonds and to lift still higher the racial bar against aliens. The blackest crime in the Seri calendar is the toleration of alien blood; and no more effective device could be found for keeping alive the race-sense on which this canon depends than that virtually sacramental surveillance of sexual intimacy which Seri usage requires.[1]

000 On scanning the conventional classifications of human marriage in the light of the Seri customs, it becomes clear that these customs define a plane not hitherto recognized observationally. For convenience, this plane and the mode of marriage defining it may, in special allusion to the correlative race-sense, be styled *ethnogamy;* and the more systematic characters of this mode and plane of marriage may be outlined briefly:

1. The most conspicuous character of ethnogamic union, as manifested in the type tribe, is its absolute confinement to the consanguineal group. The breach of this limitation is hardly conceivable in the minds of the group, since aliens are not classed as human, nor even dignified as animals of the kinds deified in their lowly faith, but contemned as unclean and loathsome monsters; yet the infraction has a sort of theoretical place at the head of their calendar as an utterly intolerable crime. In respect to this character, ethnogamy corresponds fairly with the endogamy of McLennan, Spencer, and others, i. e., with the tribal endogamy of Powell.

2. A hardly less conspicuous character of ethnogamic union is the formality, or legality, accompanying and reflecting the collective nature of the function. In this respect ethnogamy is the direct antithesis of that hypothetical promiscuity postulated by Morgan and adopted by Spencer, Lubbock, Tylor, and others; and the customs of the type tribe go farther, perhaps, than any other example in verifying the alternative

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[1] The remarkable race-sense of the tribe, with the conjugal conation in which it seems to rest, are discussed ante, pp. 180-182. There is nothing to indicate, and much to contraindicate, that the Seri are consciously engaged in stirpiculture; yet their social and fiducial devices would seem to be no less effective in developing race-sense, with its concomitants, than were those of prehistoric men in developing the physical attributes of animal associates, such as the wool-bearing of the sheep, the egg-laying of the fowl, and the milk-giving of the cow; or the still more striking mental attributes, such as the servility of the horse, the fidelity of the dog, and the domesticity of the cat. All these attributes are artificial, though not consciously so to their producers, hardly even to modern users; they are by-products of long-continued breeding and exercise, commonly directed toward collateral ends (as when the horse was bred for speed, the dog for hunting, and the fowl and cat for beauty); and, similarly, the Seri race-sense would seem to be largely a by-product of faith-shaped customs designed primarily to propitiate or invoke mystical potencies—yet the collateral effect is not diminished because overlooked in the primary motive.

assumption of Westermarck that the course of conjugal development is rather from monogamy toward promiscuity than in the reverse direction. 000

3. A noteworthy character of ethnogamic union is the absence of capture of either bride or groom. Any semblance of capture would indeed be wholly incongruous with the rigid confinement of union to members of the group; it would also be incongruous with the exceeding formality and necessary amicability of both preliminary and concomitant arrangements.

4. Another noteworthy character is the total absence of purchase on either part. Although a material condition attends the union, it is essentially a test of character, and is applied in such wise as to dignify the feminine element rather than to degrade it like barbaric wife-purchase; while any semblance of purchase would be incongruous with the economic condition of a tribe practically destitute of accumulated property or even of thrift-sense.

5. A significant character of ethnogamic union, as exemplified in the type tribe, is the ceremonial or constructive monogamy. While there are obscure (and presumptively vestigial) traces of polyandry or adelphogamy, and while an informal polygyny is practiced by the chiefs and older warriors, the formal matings are between one man and one woman, and appear to be permanent.

Now, on comparing these characters with those revealed in the marital customs of other tribes and peoples, they are found to betoken a notably provincial and primitive culture-stage. Perhaps the nearest American approach to the Seri customs is found among certain California aborigines, notably the Yurok and Patawat tribes, who recognize the institution of "half-marriage";[1] but here the material test of Seriland is replaced by purchase, while no trace of the moral test is found (even as among the Carolina Indians, according to Lawson); moreover, while these tribes discourage alien connections, they are not absolutely eschewed and reprobated as among the Seri. Other notably primitive customs, like those so fully described by Spencer and Gillen, have been found among the Australian aborigines;[2] but even here a part only of the marriages are regulated by amicable convention, while others are effected by (1) charm, (2) capture, and (3) elopement; and these collateral devices imply intertribal relations of a kind incongruous with the ethnogamic habit and utterly repugnant to the ethnogamic instinct. In both cases, accordingly, the marital customs clearly imply (and actually accompany) a much more highly differentiated socialry and economy than that of the Seri. The same is true of that vestigial custom of the Scottish clans known as handfasting, which is, moreover, a direct antithesis of the Seri custom in that it carries a warrant for, rather than an abridgment of, conjugal prerogatives; and the same

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[1] Contributions to North American Ethnology, vol. III, 1877 (Tribes of California, by Stephen Powers), pp. 56, 96.

[2] The Native Tribes of Central Australia, 1899, pp. 554-560 and elsewhere.

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might be said also of various South American, African, and southeastern Asian customs.

Certain representative North American customs have already been seriated in connection with the Seri customs, and their relations are of sufficient significance to warrant recapitulation. The series begins with the maternally organized and practically propertyless Seri. Next stand the Zuñi, with an essentially maternal organization, the vestigial moral test of the groom noted by Cushing, and a concomitant material test verging on purchase; so, too, monogamy persists, while the function remains largely collective, and is regulated by the elders, though the bride enjoys special prerogatives; and the fierce tribal endogamy is relaxed, though clan exogamy is enforced. Measurably similar to those of the Zuñi are the marital customs of the peaceful Tarahumari tribe of northern Mexico and the once warlike Seneca tribe of northeastern United States, although among both of these more cosmopolitan peoples the regulations are less closely similar to the Seri customs than are those of the Pueblo tribe named. Next in order of marital differentiation stand the Kwakiutl and Salish tribes of British Columbia, in which the social organization has practically passed into the paternal stage; here the laws of monogamy, clan exogamy, and tribal endogamy are materially relaxed, the moral test is lost among the Kwakiutl and reduced to a curious vestige among the Salish, while the material test is commuted into the making of expensive presents. Still more remote from the initial stage is the marriage of the paternally organized Omaha, among whom tribal endogamy is prevalent but not absolute, while polygyny is customary; among whom the moral test seems wholly obsolete, while the material test is completely replaced by purchase (or at least by the interchange of expensive presents); and among whom, concordantly, the feminine privileges are few and the females are practically degraded to the rank of property of male kindred or spouses. These several customs fall into a natural order or series definitely coordinated with the esthetic, the industrial or economic, and the general institutional or social conditions of the respective tribes; and it is noteworthy that they mark successive stages in that passage from the mechanical to the spontaneous which characterizes demotic activity.[1]

In brief, ethnogamy, as exemplified by the type tribe, accompanies that strictly maternal organization which marks the lowest known stage of social development; it accompanies also a rudimentary esthetic condition in which decorative symbols are restricted to the expression of maternal relation; it accompanies, in like manner, an inchoate economic

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[1] Cf. The Beginning of Marriage, op. cit. The conclusion from the details discussed in this paper is as follows: "Summarizing the tendencies revealed in this history, it would appear that the course of evolution [of conjugal institutions] has been from the simple to the complex, from the definite to the indefinite, from the general to the special, from the fixed to the variable, from the involuntary to the voluntary, from the mechanical to the spontaneous, from the provincial to the cosmopolitan, or, in brief, from the chiefly biotic to the wholly demotic" (p. [illegible]).

condition characterized by absence of property and thrift-sense; while 000
its most essential concomitant is extratribal antipathy too bitter to permit toleration of alien blood, or even of alien presence save under the constraint of superior force.

MORTUARY CUSTOMS

The prevailing opinion among the better informed Caucasian neighbors 649
of the Seri is that the tribesmen display an inhuman indifference
to their dead; and this opinion is one of the factors—combining with 764
current notions as to cannibalism and arrow-poisoning and beastlike toothing in battle—involved in the widespread feeling that the tribesmen are to be accounted as mongrel and uncanny monsters rather than human beings.

The opinion that the Seri neglect their dead on occasion would seem 114
to rest on a considerable body of evidence; Mendoza's record of the
numberless neglected corpses of warriors polluting the air and poisoning 764
the streams of Cerro Prieto in 1757 would seem to be unusual only in its fulness; and Señor Encinas, albeit so conservative as to repudiate the reputed anthropophagy and to recognize better qualities among the folk than any contemporary, declares that they are utterly negligent of their dead, save that when the bodies lie near rancherias heaps of brambles are thrown over them to bar—and thus to lessen the disturbance from—prowling coyotes. Quite indubitable, too, is the specific testimony of vaqueros to the effect that Seri raiders overtaken by the Draconian penalty of the frontier merely lie where they fall, even when this is well within reach of the tribesmen, Don Andrés Noriega's verification of his boast (ante, p. 113) being an instance in point. On the other hand stands the conspicuous fact (unknown to the frontiersman) that well-marked cemeteries adjoin some of the rancherias of interior Seriland. The sum of the somewhat discrepant evidence accords with a
characteristically unsatisfactory statement by Mashém, to the effect [562]
that the mourning ceremonies are important only in connection with
women—i. e., matrons—because "the woman is just like the family" ("la muger es como la familia"); and this intimation, in turn, is corroborated by the single known instance of inhumation in Seriland, as well as by certain indirect indications connected with the scatophagic customs (ante, p. 213). On the whole it seems certain that the mortuary ceremonies attain their highest development in connection with females, the recognized blood-bearers and legislators of the tribe.

The special dignification of females in respect to funerary rites is 171
without precise parallel among other American aborigines, so far as
is known, but is not without analogues in the shape of (presumptive) 764
vestiges of a former magnification of matrons in the mortuary customs 562
of certain tribes. The vestiges are especially clear among the Iroquoian Indians, whose aboriginal socialry coincided with that of the

Seri at various points; witness the following passage from the Onon-
171 daga mourning ritual, as collected and translated by Hewitt:

> 764 Now, moreover, again, another thing, indeed, our voices come forth to utter; and
> 562 is it not that that we say, that far yonder the Hoyaner [chief of highest grade] who labored for us so well is falling away as falls a tree? So, moreover, it is these things that he bears away with him—this file of mat-carriers, warriors all, visible and present here; also this file of those who customarily dance the corn-dances [the women]—they go prosperously. And alas! How utterly calamitous is that thing that occurs when the body of this woman falls! For, verily, far yonder in the length of the file will the file of our grandchildren be removed! These our grandchildren who run hither and thither in sport, these our grandchildren who by creeping drag themselves about in the dust, these our grandchildren whose bodies are slung to cradle-boards, and even those of them whose faces are looking hitherward as they come under the ground.[1]

The identifiable cemeteries of Seriland are few and small—much less
764 populous than might be expected of a tribe numbering several hundreds for centuries, and able to maintain well-worn trails threading all parts of their rugged domain. Three graves were noted near the abandoned rancheria at Pozo Escalante; one was observed near a jacal skeleton at Barranca Salina; five or six were made out doubtfully on a low spur adjacent to Punta Antigualla; another was found near the rancheria midway thence to Punta Ygnacio; still another was doubtfully identified hard by a ruinous jacal just where the foothills of Sierra Seri descend to the plain stretching toward Punta Miguel; and this distribution may be deemed representative. A scant half-dozen perceptible graves were observed near the considerable rancheria of Punta Narragansett, which was numerously inhabited during the Dewey surveys of 1873; one was found adjoining the old jacal near Campo Navidad; but none were discovered in connection with the extensive rancheria on Rada Ballena. The largest known cemetery occupies the triangular point of shrub-dotted plain pushing out toward the site of the old rancheria at the base of Punta Tormenta; it comprises perhaps a score of evidently ancient graves, while two newer ones were found on the pebble bar beyond the jacales. When near the pebbly beaches the graves are marked by heaps of pebbles and small cobbles, commonly about the size of those used as hupfs, these cairns being 3 or 4 feet long, two-thirds as wide, and seldom over 12 or 15 inches in height; and most of the cairns are accompanied and enlarged by piles (ranging from a peck to a bushel) of the scatophagic shells already noted. The graves remote from pebbly beaches are marked by heaps of cholla stems and branches, rudely thatched with miscellaneous brambles roughly pinned

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[1] MS in the archives of the Bureau of American Ethnology. A somewhat more obscure version was recorded by Hale in "The Iroquois Book Rites": "Now, there is another thing we say, we younger brothers. He who has worked *for us* has gone *afar off*; and he also will in time take with him all these—the whole body of warriors and also the whole body of women—they will go with him. But it is still harder when the woman shall die, because with her the line is lost. And also the grandchildren and the little ones who are running around—these he will take away; and also those that are creeping on the ground, and also those that are on the cradle-boards; all these he will take away with him." (Brinton's Library of Aboriginal American Literature, number II, 1883, pp. 141-143.)

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

764 together by okatilla stems, the shocks being sometimes nearly as high and broad as the jacales. A few of the scatophagic shells were found about the bramble-marked graves at Pozo Escalante, and a single one [768] at Barranca Salina. In general the association of cemeteries and rancherias, or of graves and jacales, indicates that habitations are usually abandoned for a time when a death occurs within or near [415] them.

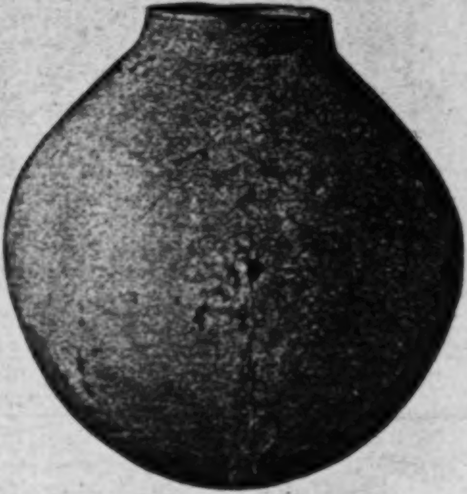

FIG. [illegible]—Mortuary olla.

The most conspicuous cairn seen in Seriland was well within Tiburon. It stands on the southern side of a little rock-butte about a mile and a half east-southeast of Tinaja Anita, south of the main arroyo, and near where the trail from the tinaja bifurcates toward Arroyo Carrizal and Punta Narragansett, respectively. It is shadowed by a notably large and widespreading paloverde, and is in the form of a cone estimated at 7 feet in height and 18 or 20 feet across the base. The materials, at least on the surface, are rounded pebbles and cobbles, possibly from the adjacent arroyos, though more probably from the beaches, of which the nearest is miles away. It was not determined to be mortuary.[1]

On the death of the matron, a grave is scooped out by means of shells

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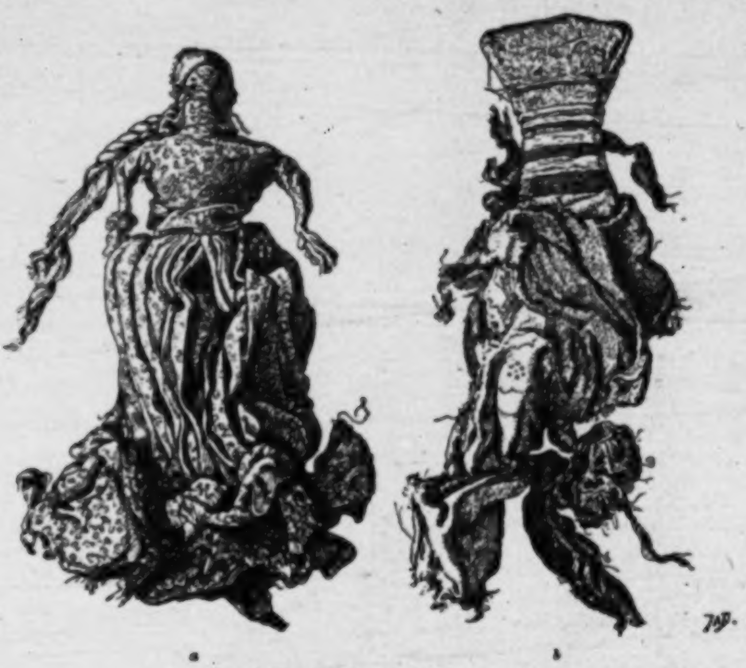
[126] [1] As an indication of the conditions for observation in Seriland, this cairn is fairly typical: it was seen but once (on December 25, 1895), and the observation was limited to a few minutes by the attendant circumstances. On the evening before the party landed at Campo Navidad, with the hope of working up the coast nearly or quite to Punta Tormenta on the following day; but before morning a down-bay gale was whitening the waters of Bahia Kunkaak so fiercely as to prohibit embarkation. Meantime the supply of water—that standard commodity of arid regions—was too nearly exhausted to permit inaction; so while Mr Johnson with three guards ascended the Sierra to establish a new topographic station, the leader of the party with the remaining seven men set out in search of water. The nearest known aguaje was that of Arroyo Carrizal; but under the hypothesis that some of the better-beaten trails turning northward might lead to nearer water, one of them was taken; and after turning back from half a dozen false scents, the principal trail was followed to the well-known Tinaja Anita, 15 miles by the trail from Campo Navidad; and here the party watered. It was on the return trip that the cairn was discovered; but the party were laden with filled canteens and saucepans and coffeepots, the day was well spent, and the camp more than a dozen miles distant even over the air line traversing spall-sprinkled taluses and sharp-edged rocks; moreover, the men were naturally and necessarily heavily armed and on constant guard. Accordingly even the short stay and cursory notes involved an additional mile of darkness on a trail so rough as to cut through shoe-soles and sandals and catch scents of blood to tempt coyotes to the camp site. Thus it was that the cairn was not more critically examined and is not more fully described.

764 a few yards from her jacal, preference being given to relatively elevated or commanding points. The excavation is about 30 inches (90 cm.) in depth; within it is placed first the pelican-skin robe of the deceased, so arranged as to fold over the body; then the corpse, dressed in the ordinary costume of life, is compressed into small compass by closely flexing the knees and bringing them against the thorax, extending the arms around and along the lower limbs so that hands and feet are together, and bending the head forward on the chest; when it is deposited in the receptacle in such manner as to lie on the left side, facing north-

[532]
[778]



a b

FIG. 40—Woman's fetishes.

ward. Near the face is laid a dish of baked clay or a large shell filled with food, and beside it a small olla of water (an actual example is shown in figure 39), while the hupf, awls, hairbrush, olla-ring, and other domestic paraphernalia are placed near the hands. Next the personal fetishes and votive symbols (in the form of puppets or dolls such as those shown in figure 40 *a* and *b*) of the dead mother are slipped beneath the face, and her paint-cup, with a plentiful supply of paint, is added; the poor personal possessions, in the form of shell-beads and miscellaneous trinketry, are then heaped over the face and shoulders, and these are covered with the superfluous garments and miscellaneous property of the deceased. Finally the pelican-pelt bedding is folded over the body, and two turtle-shells are laid over all as a kind of coffin, when the grave is carefully filled, and the ground so smoothed as to leave no mark of the burial. During subsequent hours the stones for the cairn or the cholla-joints and other brambles for the brush-heap are piled over the spot, while the scatophagic shells are added at intervals apparently for weeks or months and perhaps for years after the burial.

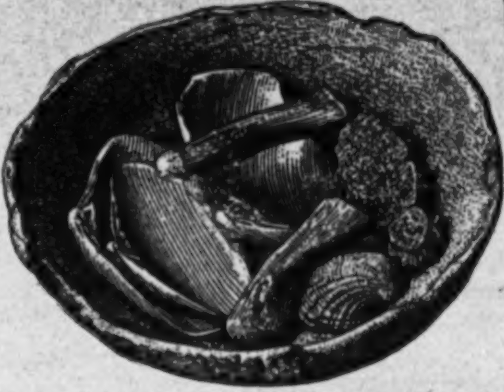


FIG. 41—Food for the long journey.

The mortuary food is carefully selected for appropriate qualities (i. e., for "strength" in the notion of the mourners). It comprises portions of turtle-flippers, and, if practicable, a chunk of charred plastron—the food substance especially associated with long and hard journeys—with a few fresh mollusks, and, judging from a single good example as well as from analogy, one or two scatophagic shells. The remains of a funerary feast are illustrated in figures 41 and 42, the latter being the scatophagic receptacle utilized apparently in the absence of the customary Noah's ark. It may be significant that this shell is perforated at the apex, evidently by long wave-wear before utilization, and that the accompanying olla bears marks of having been broken, then repaired, and afterward perforated, as illustrated in the photo-mechanical reproduction (figure 39); for these features perhaps express that idea of "killing" mortuary sacrifices, ostensibly to fit them to the condition of the deceased, though really (in subconscious practicality) to protect the sepulcher from predation.[1]

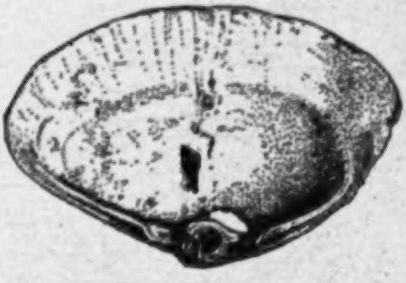


FIG. 42—Mortuary cup.

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[1] "In all stages of development belief runs a close race against cupidity, and is sometimes distanced; so the sages learn that even a buried weapon may be a source of contention, which they thenceforward forestall by breaking or burning it." (Primitive Trephining in Peru; Sixteenth Ann. Rep., Bureau of American Ethnology, 1897, p. 22.)

765 Soon after the death (immediately after the burial, so nearly as could be ascertained) there is an apparently ceremonial mourning, in which the matrons of the clan, and, at least to some extent, the warriors also, participate. The mourners wail loudly, throw earth and ashes or ordure on their heads, and beat and bruise (but apparently avoid scarifying) their breasts, faces, and arms. This is continued, culminating daily about the hour of interment, for several days—unless the rancheria is sooner abandoned, in which case the period of formal mourning is shortened.

In addition to the formal mourning of matrons there is a custom of nocturnal wailing after the death of warriors in battle, and, apparently, also, following the death of matrons or nubile maidens, which attracts the notice of frontier rancheros and vaqueros. According to their accounts the first note of lamentation may be sounded at any hour of the night by any of the group to which the deceased belonged; it is successively taken up by other members of the party until all voices are united in a resounding chorus of inarticulate moans, wails, shriller cries, and wild howls, likened by the auditors to the blood-bellowing of cattle; if other groups of the tribesmen are within hearing, they, too, take up the cry, so that the lamentation may extend to the entire tribe and echo throughout practically all Seriland at the same moment. The fierce howling and attendant excitement may rise so high in the group in which the wailing begins that all seem bereft of customary caution; and sometimes they suddenly seize ollas and weapons, and decamp incontinently, perhaps scattering widely and racing for miles before settling again for sleep or watchful guard.

775 The ideas of the folk concerning death and concerning the relations between the living and the dead are largely esoteric, and are, moreover, veiled by the nonequivalence of Seri expressions with the terms of alien languages.

At least an inchoate belief in a life beyond the grave was intimated by Mashém and his companions at Costa Rica, and their circumspection of speech and mien indicated a strong veneration for, or dread of, the manes; though the specific expressions were connected with deceased matrons, who alone seemed to be prominent in the minds of the clanmates. So far as could be gathered the belief seems to be that the dead find their way back to the primordial underworld, whence Earth and Beings were brought up by Pelican and Turtle (or Shark) respectively, and are liable to return by night with mischievous intent.

The direct expressions of the Seri informants are fully corroborated by the association of things in interior Seriland. The burial of water and food, of the personal fetishes and votive objects, and of the highly prized face-paint belonging to the dead matron, attests anticipation of a post-mortuary journey; while the temporary abandonment of jacales and rancherias and the nocturnal fears and flights alike betoken dread of sepulchral visitants. The most suggestive of the associations, i. e., between the scatophagic stores and the sepulchers, awaits full explanation. 775

SERIAL PLACE OF SERI SOCIALRY

In the conventional seriation of social development four stages are clearly recognizable, viz: (1) Savagery, in which the social organization is based on blood kinship reckoned in the female line; (2) barbarism, in which the basis of organization is actual or assumed consanguinity reckoned in the male line; (3) civilization, in which the laws are based on property-right, primarily territorial; and (4) enlightenment, in which the organization is constitutional and rests on the recognition of equal human rights to life, liberty, and the pursuit of happiness. Now, in terms of this seriation of general culture-stages, the place of the Seri tribe is clear. Reckoning consanguinity wholly in the maternal line, as they do, they belong in the initial stage of savagery. Accordingly they pertain to the lower or more primitive of the two great stages represented by the American aborigines. 000

A still more refined seriation may be effected through conspection of the several lines of activital development—the esthetic and industrial, and especially the sophic or fiducial, as well as the strictly social; for these lines are most intimately intertwined. Thus, in the Old World, the transition from maternal to patriarchal organization was accompanied, and evidently superinduced, by the development of zooculture into extensive herding; in different districts of the New World, a parallel transition attended the development of agriculture to a phase involving the protection of acequias and fields by armed men; while throughout primitive life, laws are formulated and enforced chiefly through appeals to the superphysical or mythologic. Now, review of the Seri esthetic indicates that the decorative concepts and activities are in large measure inchoate and are practically confined to a single manifestation, i. e., the delineation of totemic symbols primarily denoting zoic tutelaries and incidentally connoting the blood-carriers of clans consecrated to these beast-gods; so that the esthetic motives and devices of the tribe are essentially zoosematic. In like manner a considerable part of the technic of the tribe is zoomimic, as already shown, while even the most highly developed industrial activities occupy the biotic borderland of mechanical chance rather than the characteristic demotic realm of intellectual design. So, too, the faith of the folk is exclusively and overweeningly zootheistic, to the extent that every motion, every thought, every organized action, every law, every ceremony, is shaped with reference to mystical potencies vaguely conceived as a pantheon of maleficent beast-gods; and it is this dark and hopeless faith that gives character to the tribal esthetic and technic. Concordantly the faith finds reflection in the very elements of the social organization; the matron is the blood-carrier and the lawgiver not in and for herself

000 but as the vicarious and visible exponent of an ever-immanent beast-god—the clan tutelary; her appeals to her brothers for administrative aid are precisely parallel to her intuitive passage from zoomimicry into the field of mechanical chance defined by protolithic implements; and the appeal, like the execution of the law either by herself or by her brothers, is controlled and regulated in absolute deference to the zoic pantheon. Thus, the inchoate tribal laws, expressed in habitual lines of action and modes of thought, are by no means conscious products of human wisdom, but are confidently imputed to a superhuman wisdom on the part of myth-magnified beasts of a mystical olden time; and, similarly, the power of executing these laws is by no means cognized as conscious human faculty, but is faithfully imputed to supernal potencies of mythical monsters. Essentially, therefore, the tribal law is putatively *zoocratic;* and the social organization may justly be classed as a putative *zoocracy.*

562 642 To prevent possible confusion, it may be desirable to note specifically that the Seri government is not matriarchal in any proper sense. As pointed out elsewhere, matriarchy is not (at least among the American aborigines) an antecedent of patriarchy, but a correlative of that form of government; and it would be especially erroneous and misleading to designate as matriarchal a tribe like the Seri, whose chiefs and subchiefs (i. e., appellate clan-administratives) are invariably masculine. Neither would it be just, despite the dominance of matrons in legislative and judicative matters, to regard the tribal government as a gyneocracy, such as have been noted in various parts of North America—e. g., in Sonora, according to a current tradition as to the origin of the name of the province, and among the Pomo Indians of California, according to Cronise as interpreted by Powers;[1] for the actual control is exercised by the warrior brothers, while the ideal control is vested in that zoic pantheon of which the matrons are putative mouthpieces. Physically and practically the Seri government is an adelphiarchy, as already indicated; but in the minds of the tribesmen themselves it is an inchoate theocracy putatively headed by a pantheon of animate monsters, whose prelates are personified in the painted clan-mothers.

105 Summarily, then, the Seri are zoosematic in esthetic, zoömimic in technic, zootheistic in faith, and putatively zoocratic in government, while even the Seri tongue is so largely mimetic or onomatopoetic in form as to accord with the industries and institutions; and in view of the intimate interrelations between the several lines of activity, it would seem preferable to determine the culture-status from the coincident testimony of all the lines, but feasible to measure it in terms of any one or more of these activital lines.

171 Now, on comparing the characteristics of the Seri with those of other known tribes of North America, many resemblances and a few differ-

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[1] Tribes of California, pp. [illegible].

ences are found; and practically all of the more conspicuous differences extend in the same direction—i. e., they combine to indicate an exceptionally primitive, or lowly, or zoic, plane for the simple savages of Seriland. Thus, few tribes are so poor in esthetic as the Seri, and in none other are the esthetic devices so clearly and so exclusively zoic; few if any other known tribes so clearly exemplify zoomimic culture; none other so well represents protolithic culture, and no other known tribe is so completely devoid of mechanical devices reflecting higher culture; in general socialry no other known tribe better, or indeed so well, exemplifies zoocracy, while in such special features as those of ethnogamic mating, ceremonial scatophagy, and mortuary magnification of the blood-carriers, the folk mark the most primitive known phase of cultural advancement; and although language and faith yield less definite measure, their testimony is coincident with that of the other lines of activity. Accordingly the Seri must be assigned to the initial place in the scale of cultural development represented by the American aborigines, and hence to the lowest recognized phase of savagery. 171

Two or three corollaries of this placement are noteworthy: (1) In most of the researches concerning human development conducted by the anthropologists of the world, attention has been given chiefly or wholly to the somatic or biotic characters of *Homo sapiens;* but while various physical features of the Seri suggest bestial affinities (as has been pointed out in an earlier chapter), it is especially significant that the nearest and clearest indications of bestial relationship are found in the psychical features of the lowly folk—for zoic faith in its multifarious manifestations is but a reflection of burgeoning yet still bestial mind. 000

(2) While human independence of environment culminates in socialry, the interdependence of activital lines so well revealed in lowest savagery demonstrates that institutions and all government necessarily reflect environment; and, at the same time, that the progressive emancipation from environment signalized in the higher culture-grades measures the conquest of Nature through industrial activity—for both the productive work and the attendant exercise cumulatively elevate sapient Man above mindless Nature.

(3) An adjunct of progress in every stage of development, as indicated with especial clearness in the earliest stages, is the annulment or curtailment of both physical and formal law, and the substitution of cumulatively growing volition: the development of the esthetic passes from the intuitive toward the ratiocinative, that of the industrial from the instinctive toward the inventive, and that of the social from the merely reflective to the vigorously constructive; with every pulse of progress the subservience to blind chance and imaginative figment diminishes; and with each increment of sound confidence the ability to surmount physical obstruction and to dispense with primitive formality is cumulatively augmented.

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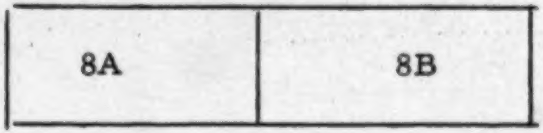
103
133

The map of Seriland appearing on pp. 8A and 8B has been processed for the files in the following manner:



1: McGee NU31 Seri NU31
175

[For the recorded history of the Seri see category 116, pp. 15, 17-19, 51-117, 126-130, 132-135.]